APPLICATION FOR PLANNING APPROVAL – INCREASED THROUGHPUT

Lot 504 Yangedi Road, Keysbrook

Harley Dykstra

PLANNING & SURVEY SOLUTIONS

Harley Dykstra

DOCUMENT CONTROL

Control Version	Date	Status	Distribution	Comment
A	9/04/2021	Draft	Client	For Review
B	14/04/2021	Final	LG	Assessment
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Prepared for: Larry Blandford

Prepared by: BH

Reviewed by: CP

Date: 15/03/2022

Job No: 21166

Version: C

DISCLAIMER

Harley Dykstra

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Harley Dykstra

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1 INTRODUCTION

1.1 INTRODUCTION & PURPOSE

This application to amend the Development Approval is proposed to enable the approved Abattoir operating at Lot 504 Yangedi Road, Keysbrook, to increase throughput from 100 tonnes per annum to 500 tonnes per annum. The application is aimed at building in operational efficiencies whilst utilising existing structures, staff numbers, and truck movements. Operating days will increase from two a week as is currently the case to five days a week.

This report includes a description of the existing and proposed operations on site, including environmental management measures relevant to the scale of increased throughput proposed by this application. A part site plan and site plan depicting the existing structures on the land are included at **Appendix A**.

1.2 LAND DESCRIPTION

1.2.1 Land Ownership Details

The details of the subject property are as follows:

- Address: Lot 504 Yangedi Road, Keysbrook
- Volume/Folio: 2101/541
- Plan: D92831
- Area: 50.4ha
- Owner: Larry Francis Blandford and Linda Dorothy Blandford

A copy of the Certificate of Title is attached at **Appendix B**.

1.2.2 Location & Context

The subject land is located at the southern extent of the Shire of Serpentine-Jarrahdale. The western boundary of Lot 504 abuts the City of Rockingham local government area (refer **Figure 1** overleaf). The subject land has a 311m legal road frontage to Yangedi Road along its eastern boundary, with vehicle access gained from an existing crossover located approximately midway along this boundary. The lot is irregular in shape due to a drainage reserve, forming part of the Punrak Drain which runs along the northern lot boundary and the previous subdivision of Lot 505 from the original lot. Lot 505 accommodates an existing pet meat abattoir (currently known as Peel Pet Foods) which has been operating for approximately 30 years. There is no dwelling on this lot.

Other than the existing dwelling located on the eastern part of Lot 504, there are no other sensitive premises located within 1km of the existing abattoir.

The land to the east of Yangedi Road has been developed for turf farms. The surrounding land is otherwise used for broad acre rural purposes.

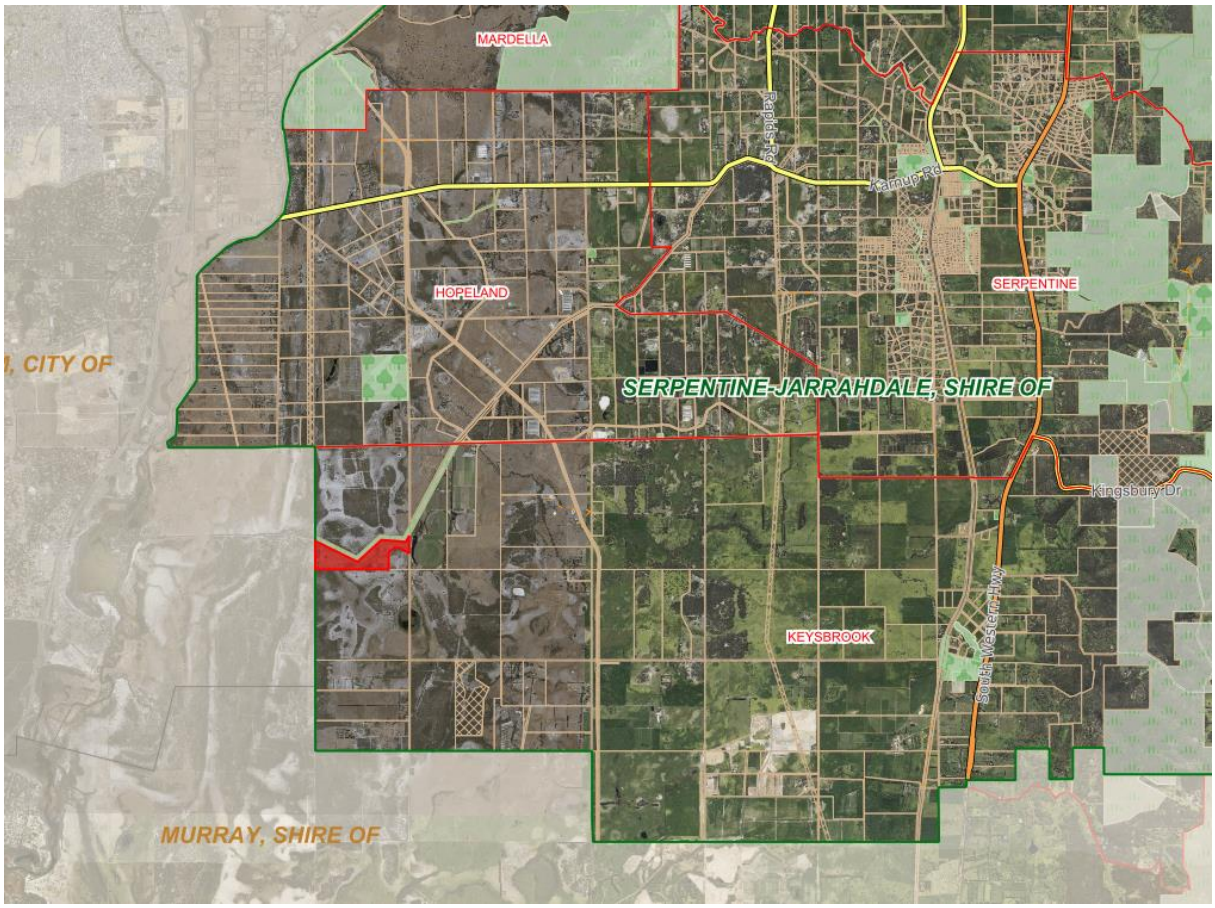


Figure 1 – Location Plan

2 EXISTING SITUATION

2.1 LAND USE

The site currently accommodates various rural buildings over its eastern part, including an existing dwelling, workshop, caretaker dwelling and general purpose shed. The land was previously used for a dairy which was converted into a Pet Meat Abattoir in accordance with a development approval granted by the Shire on 26 February 2018 (PA17/158). Since receiving the original approval, the landowner also received approval for the Pet Meat Abattoir to be used for producing meat for human consumption (PA18/419), and on 12 December 2019, approval (PA19/730) was granted for various incidental structures associated with the abattoir. The three approvals (cover letters only) are attached to this application at **Appendix C** and the distribution of existing buildings on the site are illustrated by the part site plan attached at **Appendix A**.

The balance of the property is used for grazing sheep and beef cattle as well as some cropping and hay growing /cutting all of which would continue.

2.2 LANDFORM

The subject site slopes generally from east to west, from a height of approximately 20m AHD along its eastern boundary to a height of approximately 15m AHD near the western boundary.

2.3 VEGETATION AND HYDROLOGY

The subject land has been predominantly cleared for previous rural activities. Strategic tree planting and retention has occurred in several locations, most notably near the existing boundary between Lot 504 and 505 and over the western part of the site. There is also a small pocket of retained vegetation adjacent to the southern lot boundary. The location of the vegetation onsite is evident in the Site Plans included at **Appendix A.**

Punrak Drain forms the northern boundary of Lot 504, which is approximately 100m from the existing abattoir. The majority of the site is identified as Multiple Use wetland in the Department of Parks and Wildlife *Geomorphic Wetlands of the Swan Coastal Plain* data base.

2.4 SERVICING

The subject site is serviced with power and telecommunications. A long established onsite water supply services the site, including the requirements of the existing dwelling and caretakers dwelling, abattoir, and irrigated paddocks. The existing on-site water supply to the abattoir is considered to be sufficient to accommodate the increased throughput.

2.5 EXISTING ABATOIR OPERATION

The small scale abattoir was approved and developed to the specifications illustrated in plans attached to PA17/158 and PA18/419 included at **Appendix C**. While the current development approval caters for the processing of 100 tonnes of meat per year, the abattoir is designed for increased throughput. The abattoir and associated structures consists of the structures listed in the Buildings/Structures Summary table included on the part site plan attached at **Appendix A.** It is noted that not all structures approved by the Shire of Serpentine-Jarrahdale as part of PA19/730 have been constructed as listed below:

- Beef Lairage;
- Lean-to;
- Pet food packaging and store room; and
- A portion of the caretakers dwelling.

Despite this, the structures which are existing as illustrated on the part site plan, are able to cater for the increased throughput to 500 tonnes per annum.

3 PROPOSED DEVELOPMENT

3.1 DEVELOPMENT SUMMARY

This application seeks to facilitate the increased throughput of the approved abattoir from 100 tonnes per annum to 500 tonnes per annum. No additional structures are proposed as part of this application and for the most part, operational details will remain consistent with existing and approved operations on site as detailed in subsequent sections of this report. The site will operate up to five days a week rather than two as is currently the case.

3.2 BUILT FORM

The existing abattoir is primarily constructed of colorbond material. As stated above, no change to the existing and approved structures is proposed as part of this application.

3.3 ABATTOIR OPERATIONS AND WASTE MANAGEMENT

The abattoir was originally intended to process up to 100 tonnes of meat per year as per the demand at that time. Despite this, the facility will be able to cater for increased throughput to 500 tonnes per annum without any additional building requirements given that the facility is currently operating far below capacity. While staff numbers (2-3) and operating hours will remain unchanged, operating efficiencies will increase. There will also be no change to the approved operating days (5).

The abattoir will continue to be primarily used for processing sheep, although occasionally Kangaroos and injured local cattle will be processed. Sheep will continue to be typically kept on site for no more than five (5) days prior to being processed in the facility.

Animals will continue to enter the facility via a ramp leading to a holding pen before entering the processing area to be dispatched. No blood or offal actually hits the ground as it is all captured in removable waste bins under chutes located beneath a grated floor in the processing area and stripping room. The abattoir process is a completely closed process with all animal waste and offal being placed into separate containers which are taken off site, generally each day by Harvey Beef. As confirmed by the letter attached at **Appendix D**, Harvey Beef currently and will continue to provide a service in the removal of Raw Material Waste from the abattoir.

In instances where blood and offal bins are not emptied daily they are kept overnight in the fully enclosed cool room. The completed packaged product is collected from the site several times per week for delivery.

Given that the facility will continue to be relatively small scale, a works approval would not be required because the abattoir would not be a Category 15 Prescribed Premises under the Environmental Protection Regulations 1987 (1000 tonnes or more). The facility would need to comply with the relevant codes of practice and the regulations contained in the Environmental Protection (Abattoirs) Regulations 2001 given that the facility would process more than 100 tonnes per year and less than 1000 tonnes per year.

Approximately 500-1000 liters of water will be used per day to wash down the abattoir facility. Wastewater shall be captured by the concrete floor of the secondary processing area and directed via the cross fall of the floor to an existing sump where any solids are left to settle. Water shall then be pumped to a tank and injected into the paddock reticulation system with other water and used to irrigate crops. Solids captured in the sump will be scraped out using a bobcat on a weekly basis, stockpiled on site and spread on the property.

The landowner will submit annual compliance assessment reports to the Shire on commencement of the increased throughput. The reports will include an internal compliance audit of the development approval conditions and management plans.

3.4 NOISE AND DUST MANAGEMENT

Given the small scale and enclosed nature of the facility and the sufficient separation distances from sensitive uses well in excess of those recommended by the EPA Guidance, the increased throughput will have no significant impact on the amenity of the locality in relation to noise or dust emissions. Further details are provided in section 4.3.4 of this application.

3.5 TRAFFIC

Yangedi Road, which provides access to the property, is a rural bituminised road. To the south of the property Yangedi Road is constructed to a gravel standard. To the north, Yangedi Road links to Punrak Road and Hopelands Road. Traffic generated by the approved abattoir is currently and will continue to be from the north.

Despite the proposed increased throughput to 500 tonnes per annum, it should be noted that there will be no change to the approved number of truck movements to and from the site. Therefore, daily truck movements will be as follows:

- One six wheeler truck to deliver animals; and
- One truck to pick up offal.

Given that trucks entering and exiting the site are currently drastically underloaded, the number of animals delivered and the amount of waste removed is able to be accommodated within the approved number of truck movements. A delivery van shall deliver the meat several times per week from the site.

4 PLANNING CONTEXT

4.1 STATUTORY FRAMEWORK

4.1.1 Metropolitan Region Scheme

The subject land is zoned 'Rural' in the Metropolitan Region Scheme (MRS), as is the land immediately to the north, west and south. The proposed use is consistent with the zoning of the land under the MRS.

4.1.2 Shire of Serpentine-Jarrahdale Town Planning Scheme No. 2

The subject land is zoned 'Rural' in the Shire of Serpentine-Jarrahdale's Town Planning Scheme No. 2 (TPS 2). The properties to the north, east and south are also zoned Rural **(Figure 2).** The land to the west is zoned 'Rural' under the City of Rockingham Town Planning Scheme No. 2 **(Figure 3).**

The Shire of Serpentine-Jarrahdale TPS 2 includes an 'Area of Natural Beauty' designation over the adjoining lot to the south (No. 31 – Yangedi Swamp), although this designation does not apply to the subject land and will in no way be impacted on by the proposed increased throughput.

Clause 5.10.1 of TPS 2 states that: *the purpose and intent of the Rural Zone is to allocate land to accommodate the full range of rural pursuits and associated activities conducted in the Scheme Area*.

The proposed pet meat abattoir is considered an *Industry-Noxious* land use, which is defined as meaning:

> *"an industry in which the processes involved constitute an offensive trade within the meaning of the Health Act, 1911 (as amended), but does not include a fish shop, dry cleaning premises, marine collectors yard, laundromat, piggery or poultry farm*."

Industry - Noxious is an "SA" use in the Rural zone meaning that Council were able to approve the existing abattoir and therefore in like manner, the Shire is able to approve the proposed increased throughput.

The subject land is also located with the Poultry Farm Special Control Area which isn't considered to be relevant to this proposal.

4.1.3 Shire of Serpentine-Jarrahdale Draft Local Planning Scheme No. 3

The Shire of Serpentine Jarrahdale recently advertised draft Local Planning Scheme No.3 (LPS 3) and considered it at a Special Council Meeting on 29 June 2020, in which Council resolved to endorse it (and the Local Planning Strategy) with modifications and to forward it to the Western Australian Planning Commission (WAPC) for consideration.

The subject land, under LPS 3, is proposed to be zoned 'Rural'. The use of the land is defined under LPS 3 as an 'Abattoir' which means:

"premises used commercially for the slaughtering of animals for the purposes of consumption as food products."

'Abattoir' is an 'A' use in the 'Rural' zone meaning that it is capable of approval after notice has been given in accordance with Clause 64 of the deemed provisions.

LPS 3 also identifies the subject land as being with Special Control Area (SCA) 4 (Agri-Food Processing and Production) and SCA 6 (Buffers) with which this application is considered to be consistent.

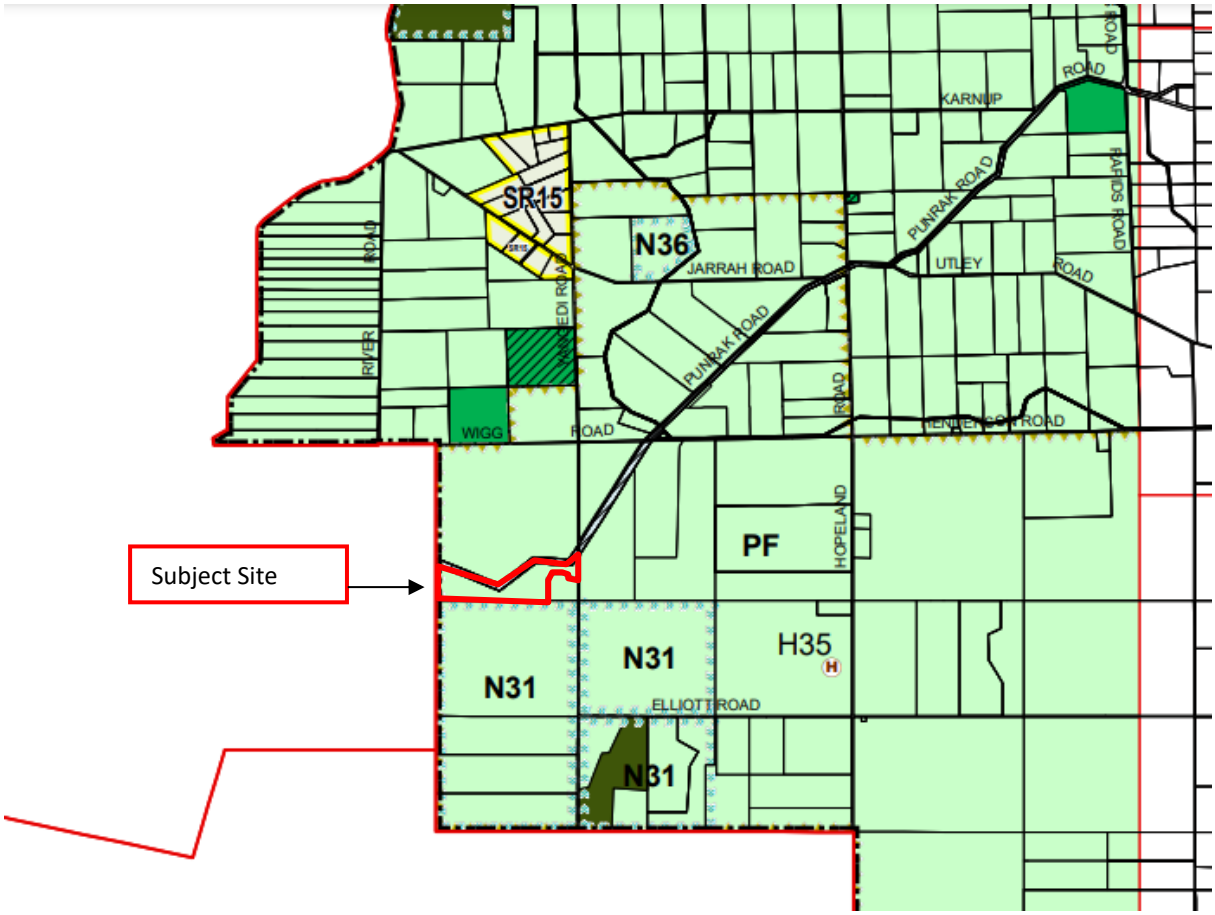


Figure 2 – Shire of Serpentine –Jarrahdale TPS 2 Zoning Map

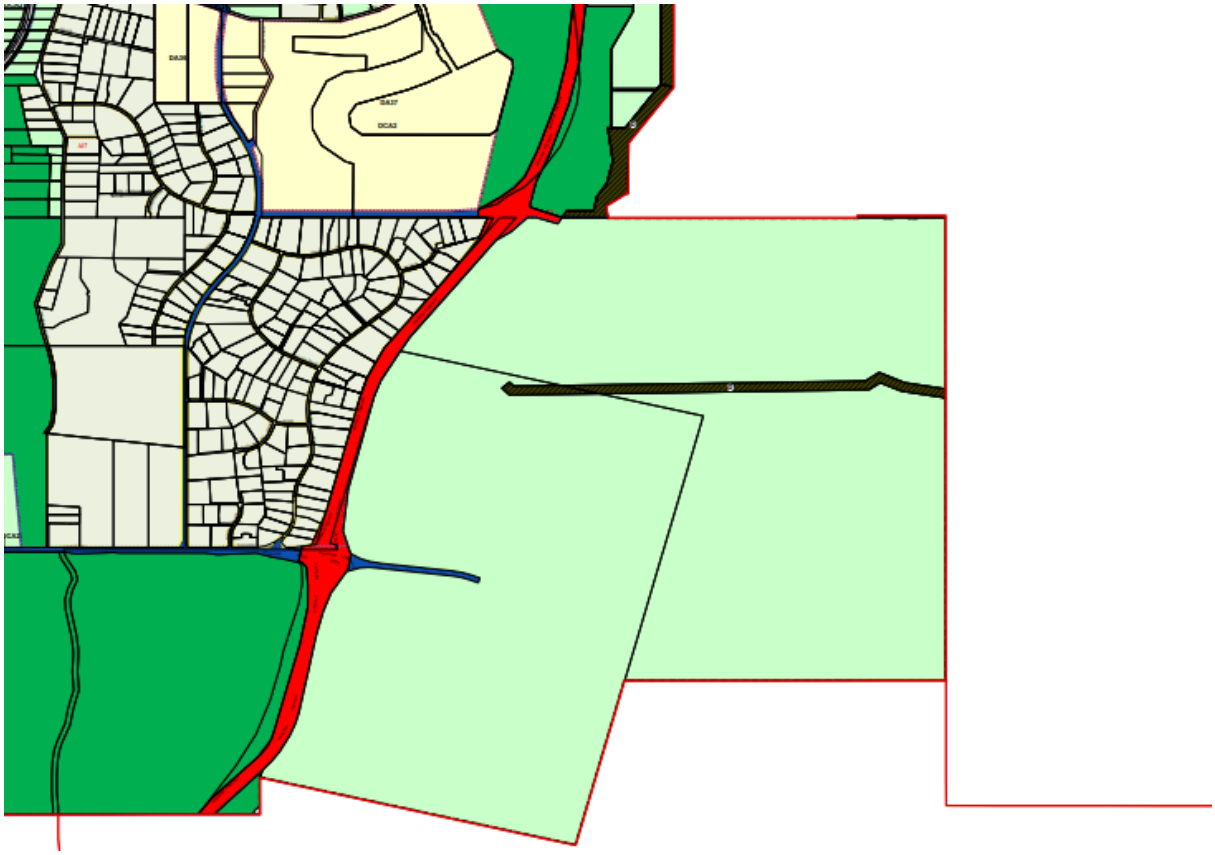


Figure 3– City of Rockingham TPS 2 Zoning Map

4.2 STRATEGIC FRAMEWORK

4.2.1 Shire of Serpentine Jarrahdale Draft Local Planning Strategy.

The subject site is identified as 'Rural Land' in the Shire of Serpentine Jarrahdale draft Local Planning Strategy which was adopted by council at the 29 June 2020 council meeting. Section 3.3 describes the overall intent for 'Rural Land' as follows:

> *"The Rural land use category provides for a full range of rural land uses, tourism opportunities, rural enterprise and the preservation of the natural landscape. Rural land facilitates agricultural production and the protection of the natural landscape. A significant proportion of the Shire is comprised of rural areas which are located in many of the undeveloped areas of the Shire where it is considered preferable for large lots to be retained. Rural enterprise areas allow for the operation of rural and light industries on the same lot as a residential dwelling, enabling businesses and intensive agricultural industries. Rural enterprise land is identified in the Oakford area where many smaller lot sizes already existing and accommodate light industrial and intensive agricultural land uses."*

Given that this proposal will retain and maintain traditional agricultural uses in the 'Rural Zone' and because the proposal is generally consistent with the original approval the Shire granted for the abattoir in 2018, the proposed throughput increase is consistent with the Shire's Draft Local Planning Strategy.

4.3 OTHER RELEVANT DOCUMENTS

4.3.1 State Planning Policy 2.5 – Rural Planning (2016)

The objectives of State Planning Policy 2.5 are to:

a) *support existing, expanded and future primary production through the protection of rural land, particularly priority agricultural land and land required for animal premises and/or the production of food;*
b) *provide investment security for existing, expanded and future primary production and promote economic growth and regional development on rural land for rural land uses;*
c) *outside of the Perth and Peel planning regions, secure significant basic raw material resources and provide for their extraction;*
d) *provide a planning framework that comprehensively considers rural land and land uses, and facilitates consistent and timely decision-making;*
e) *avoid and minimise land use conflicts;*
f) *promote sustainable settlement in, and adjacent to, existing urban areas; and*
g) *protect and sustainably manage environmental, landscape and water resource assets.*

The proposed increased throughput of the abattoir is consistent with the relevant objectives of SPP 2.5 in that it supports the continuation of agricultural uses on-site and the continued operation of a small scale rural activity (abattoir) within infrastructure that is already existing. In particular it should be noted that this proposal will result in no land use conflicts with surrounding land uses and will have no impact on the environment.

4.3.2 State Planning Policy 2.1 – Peel Harvey Coastal Plain Catchment

Lot 504 Yangedi Road is included within the Peel Harvey Coastal Plain Catchment boundary and hence SPP 2.1 applies to the site. A key objective of SPP 2.1 is to: *prevent land uses likely to result in excessive nutrient export into the drainage system.* SPP 2.1 also seeks to ensure uses which generate significant wastewater are subject to DER Works Approvals and licensing. Given the small scale nature of the abattoir despite the increased throughput, no significant nutrient export into the catchment is anticipated. In fact, the proposed wastewater management practices are likely to occur as was proposed in the original Nutrient and Irrigation Management Plan (NIMP) prepared by Bioscience given that wastewater currently produced by the facility is less than what was originally estimated. Further details are included in the NIMP prepared by Bioscience and section 4.3 of this report.

4.3.3 State Planning Policy 2.5 – Planning in Bushfire Prone Areas

The Western Australian Planning Commission's State Planning Policy 3.7 – *Planning in Bushfire Prone Areas* (SPP 3.7) and accompanying Guidelines for Planning in Bushfire Prone Areas sets out specific guidelines and requirements for subdivision and development in order to preserve life and reduce the impact of bushfire on property and infrastructure.

As identified by the Department of Fire and Emergency Services bushfire prone mapping, the subject land is identified as bushfire prone (see **Figure 4** overleaf). Despite this, a Bushfire Management Plan has not been prepared in support of this application given that this proposal relates to changing operations rather than proposing new structures. In addition, it is considered that this proposal complies with the exemptions contained in Planning Bulletin 111 – *Planning in Bushfire Prone Areas* given that there will be no increase to the number of employees on-site or introduction of a vulnerable land use.

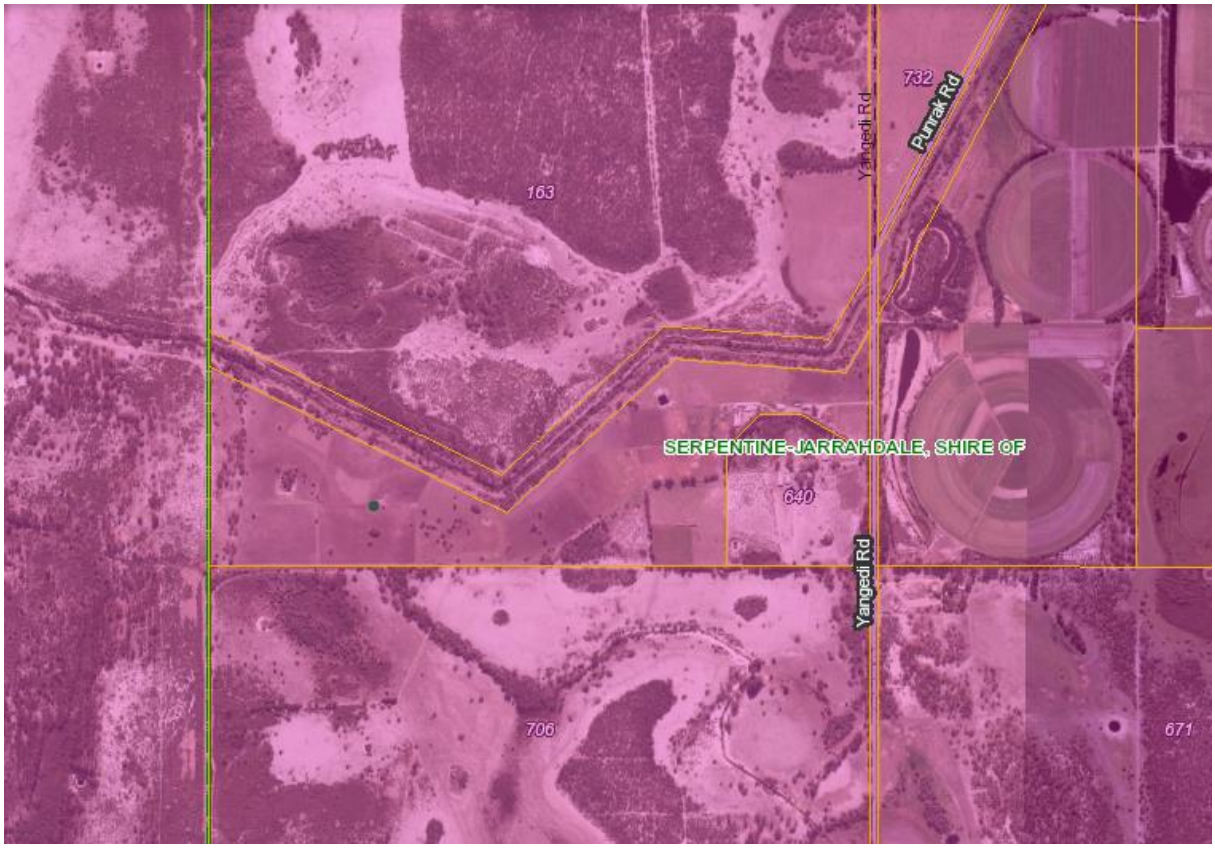


Figure 4 – Bushfire Prone Areas Mapping

4.3.4 EPA Guidance No. 3 – Separation Distances between Industrial and Sensitive Uses

The EPA Guidance No. 3 recommends a separation distance of 500-1000m between Abattoirs and sensitive uses, depending on the size of the facility. The abattoir will continue to be small scale in nature despite the proposed throughput increase. At the scale of 500 tonnes per annum, the facility will continue to be well below the

threshold under the *Environmental Protection Regulations, 1987* to be considered a Category 15 prescribed premises (processing 1000 tonnes or more per year) and hence does not require a Works Approval issued by the Department of Environment Regulation.

It is noted that Regulation 3 of the *Environmental Protection (Abattoirs) Regulations 2001* states the following:

> *"These regulations apply to an abattoir if the production or design capacity of the abattoir is —*
>
> *a) more than 100 tonnes per year; and*
> *b) less than 1000 tonnes per year."*

Therefore, as a result of increased throughput, the regulations contained in the *Environmental Protection (Abattoirs) Regulations 2001* are applicable to this proposal. In particular, it is noted that the regulations states that an operator must not use treated wastewater for irrigation unless a treated wastewater irrigation management plan has been submitted and approved by the DER. An updated Nutrient and Irrigation Management Plan (NIMP) has been provided by Bioscience as attached at **Appendix E**. Overall, the NIMP concludes that there will be no change to the health and amenity impacts of the abattoir.

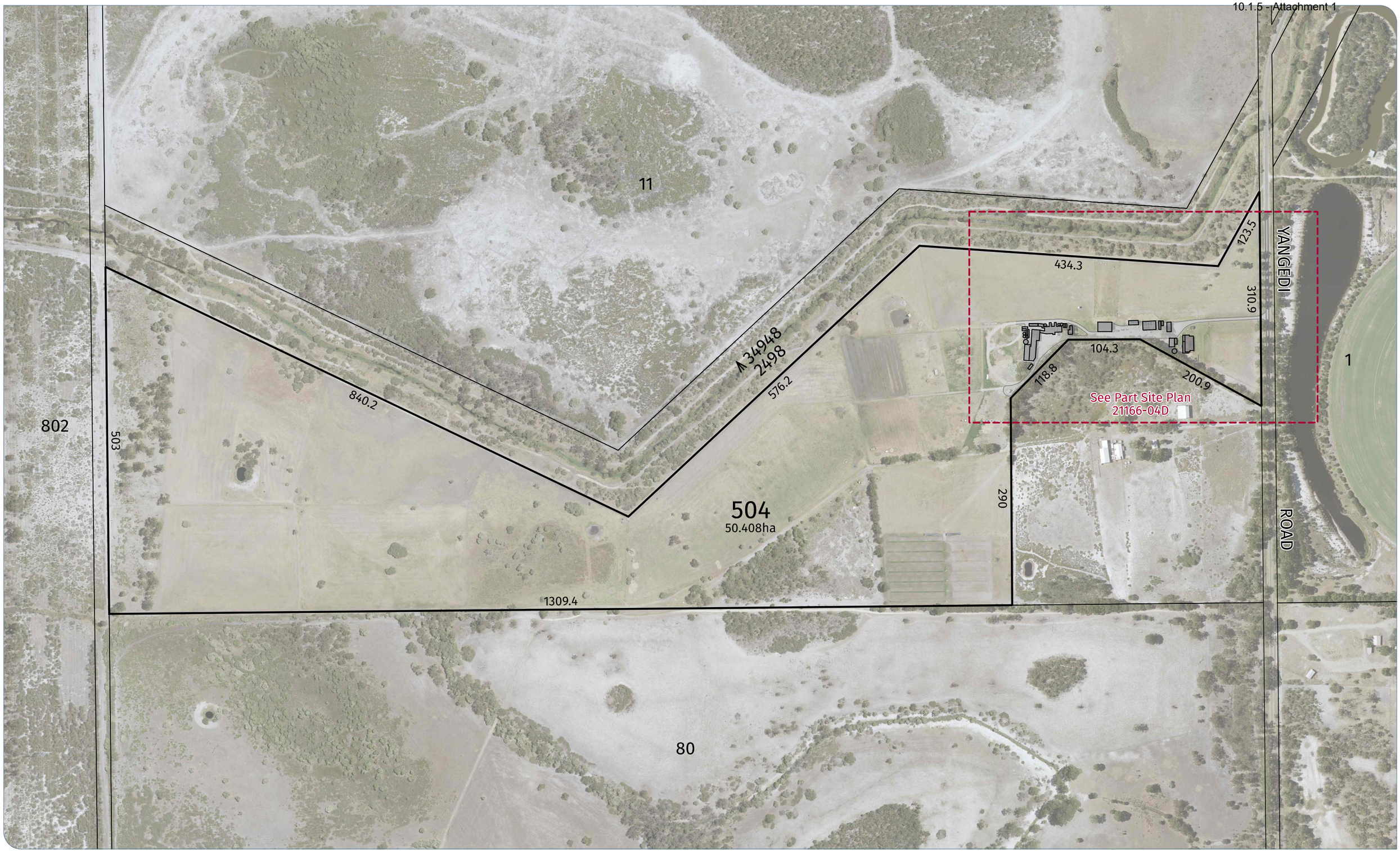
As demonstrated by the previous application and approval granted by the Shire of Serpentine-Jarrahdale, the abattoir is sufficiently separated from sensitive land uses. Hence, the proposal will continue to comply with EPA Guidance No.3.

5 CONCLUSION

This application seeks to facilitate increased throughput of the approved abattoir at Lot 504 Yangedi Road, Keysbrook from 100 tonnes per annum to 500 tonnes per annum. No building additions are required to support the proposed increased throughput and therefore apart from minor operational details, this proposal is entirely consistent with the previous development approvals. In terms of nutrient loading, the updated NIMP prepared by Bioscience demonstrates that there would be no significant impact to the environment. Further, the increased throughput will not generate increased odour, dust or noise impacts therefore resulting in an abattoir facility that continues to not adversely affect the rural amenity of the locality.

On the basis of the details and justification provided in this submission, the approval of the Shire of Serpentine-Jarrahdale is respectfully requested for the proposed increase to 500 tonnes per annum.

APPENDIX A | DEVELOPMENT SITE PLAN AND PART SITE PLAN



SITE PLAN

Lot 504 on D 92831
Yangedi Road, KEYSBROOK

Plan No.	21166-05	
Date	24/03/21	
Drawn	NP	
Checked	BH	
Revision	D	
Scale	1:5000@A3	0 50m 100m 150m

PERTH & FORRESTDALE:
Lvl 1, 252 Fitzgerald St
PERTH WA 6000
15/2 Hensbrook Loop,
FORRESTDALE WA 6112
T: 08 9495 1947
E: metro@harleydykstra.com.au
ALBANY | BUNBURY | BUSSELTON | FORRESTDALE | PERTH

NOTE: This plan has been prepared for planning purposes. Areas, Contours and Dimensions shown are subject to survey

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BUILDINGS / STRUCTURES SUMMARY

NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
1	Offal Cool Room	14	Pump Shed
2	28,000L Water Tanks 4.0m Diameter	15	Cool Rooms
3	92,000L Water Tank 7.0m Diameter	16	Lunch Room
4	28,000L Water Tanks 4.0m Diameter	17	Carport
5	28,000L Water Tanks 4.0m Diameter & 30,000L Water Tank 3.5m Diameter	18	Shed
		19	Sea Containers
6	Caretakers Dwelling	20	Shed
7	Feed Shed	21	Workshop
8	Stock Yard	22	Carport
9	Machinery Shed and Hay Store	23	Water Tank
10	Abattoir	24	Patio
11	Roof Over Ramp	25	Shade Sails
12	Concrete Slab	26	Dwelling
13	Waste Water Pit		

34948
2498

YANGEDI ROAD

504
50.408ha

505

11.8

12.6

9.6

1

DIAL BEFORE YOU DIG
www.1100.com.au

LEGEND

Subject Land

Existing / Approved Structures

Date of Aerial Imagery: December 2020

PART SITE PLAN

Lot 504 on D 92831
Yangedi Road, KEYSBROOK

Plan No.	21166-04	
Date	24/03/21	
Drawn	NP	
Checked	BH	
Revision	D	
Scale	1:1250@A3	0 10m 20m 30m

PERTH & FORRESTDALE:
Lvl 1, 252 Fitzgerald St
PERTH WA 6000
15/2 Hensbrook Loop,
FORRESTDALE WA 6112
T: 08 9495 1947
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Harley Dykstra
PLANNING & SURVEY SOLUTIONS

APPENDIX B | CERTIFICATE OF TITLE

REGISTER NUMBER	
504/D92831	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
1	**13/6/2001**

WESTERN AUSTRALIA

VOLUME **2101** FOLIO **541**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 504 ON DIAGRAM 92831

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

LARRY FRANCIS BLANDFORD
LINDA DOROTHY BLANDFORD
BOTH OF LOT 2, PARSONS ROAD, MARDELLA
AS JOINT TENANTS

(A G438256) REGISTERED 3/4/1997

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. G135297 MORTGAGE TO NATIONAL AUSTRALIA BANK LTD REGISTERED 26/3/1996.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	2101-541 (504/D92831)
PREVIOUS TITLE:	1653-998
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF SERPENTINE-JARRAHDALE

NOTE 1: M354588 DUP C/T NOT PRODUCED FOR DOCUMENT M354588.

APPENDIX C | PREVIOUS APPROVALS

Shire of Serpentine Jarrahdale
Sustainable. Connected. Thriving!

All enquiries to Planning Services on 9526 1111
Our ref: PA17/158: HC:wj

8 March 2018

Harley Dykstra
PO BOX 316
KELMSCOTT WA 6991

Via email: david@harleydykstra.com.au

Dear Sir/Madam,

Proposed Pet Meat Abattoir ('Noxious Industry')
Lot 504 Yangedi Road, Keysbrook

I refer to your application, received 16 March 2017, for approval to commence development on the aforementioned lot.

In accordance with the provisions of the Shire's Town Planning Scheme No. 2 and the authority delegated to Council under the provisions of the Metropolitan Region Scheme, your application to commence development has been approved. Attached is the Notice of Determination of Application for Development Approval stating the conditions with which the development is required to comply.

Should you be aggrieved by any of the decision or any conditions imposed, you have the right under the *Planning and Development Act 2005* to have the decision reviewed by the State Administrative Tribunal. Applications for review must be submitted to the Tribunal within 28 days of the date on the decision notice. Further information can be obtained by calling the Tribunal on (08) 9219 3111 or by visiting their website at www.sat.justice.wa.gov.au

Your attention is drawn to the fact that this consent constitutes planning approval only and that a Building Permit may be required from the Shire prior to the commencement of construction works. Where relevant, the nominated builder should be provided with a copy of conditions of the Notice of Determination on Application for Development Approval. The Building Permit application cannot be accepted until all relevant planning conditions are cleared by the Shire. Accordingly, please ensure that the drawings and information supplied to the Shire for a building permit address any conditions issued on the planning approval by the Shire to avoid delays in the issue of the Permit. Please note that any amendments proposed outside of the approved plans and conditions of development approval may result in the requirement for a new Planning Application to be submitted for assessment and determination.

Yours faithfully

Regan Travers
Acting Manager Statutory Planning and Compliance

a 6 Paterson Street, Mundijong WA 6123 t 08 9526 1111 f 08 9525 5441 e info@sjshire.wa.gov.au www.sjshire.wa.gov.au

6 Paterson Street
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Western Australia

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Web: www.sjshire.wa.gov.au
Email: info@sjshire.wa.gov.au

Planning and Development Act 2005
Shire of Serpentine Jarrahdale
Notice of Determination on Application for Development Approval

Property File:	A57300	Application No:	PA17/158
Location:	Lot 504 Yangedi Road, Keysbrook		
Lot:	504	Plan/Diagram:	92831
Vol. No:	2101	Folio No:	541
Application Date:	13 March 2017	Received On:	16 March 2017

Description of Proposed Development: Pet Meat Abattoir

Use Class: 'Noxious Industry'

Date of Determination: 26 February 2018

That Council approves the development application submitted by Harley Dykstra on behalf of L and L Blandford on Lot 504 Yangedi Road, Keysbrook as contained in attachment OCM006.1/02/18 and OCM006.3/02/18 in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015* subject to the following conditions:

1. The development is to be carried out in compliance with the plans and documentation listed below and endorsed with Shire of Serpentine Jarrahdale stamp, except where amended by other conditions of this consent.

Plans and Specifications	Plans P1 – P5 received at the Shire's Offices on the 16 March 2017 and P6 the Nutrient and Irrigation Management Plan, Issue 3, dated November 2017

2. No more than 100 tonnes of pet meat is to be processed per annum.

3. An Environmental Management Plan shall be prepared for the pet meat processing facility and be submitted to and approved by the Shire prior to the use commencing. The plan shall detail how health and amenity impacts will be managed including, odour, noise, dust and waste. A suitably qualified and experienced person to the satisfaction of the Shire must prepare the Environmental Management Plan.

NOTE 1: If the development the subject of this approval is not substantially commenced within a period of 2 years, or another period specified in the approval after the date of the determination, the approval will lapse and be of no further effect.

NOTE 2: Where an approval has so lapsed, no development must be carried out without the further approval of the local government having first been sought and obtained.

6 Paterson Street
Mundijong 6123
Western Australia

Shire of Serpentine Jarrahdale

Telephone: 9526 1111
Facsimile: 9525 5441
Web: www.sjshire.wa.gov.au
Email: info@sjshire.wa.gov.au

NOTE 3: If an applicant or owner is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the *Planning and Development Act 2005* Part 14. An application must be made within 28 days of the determination.

Signed: Dated:

For and on behalf of the Shire of Serpentine Jarrahdale

Shire of Serpentine Jarrahdale
Sustainable. Connected. Thriving!

All enquiries to Planning Services on 9526 1111
Our ref: PA18/419: HC:wj

20 August 2018

Harley Dykstra
PO Box 316
KELMSCOTT WA 6991

Via email: david@harleydykstra.com.au

Dear Sir/Madam,

Proposed Amendment to Existing Approval for Pet Meat Abbatoir to allow for the production of both Pet Meat and Meat for Human Consumption
Lot 504 Yangedi Road, Keysbrook

I refer to your application, received 30 May 2018, for approval to commence development on the aforementioned lot.

In accordance with the provisions of the Shire's Town Planning Scheme No. 2 and the authority delegated to Council under the provisions of the Metropolitan Region Scheme, your application to commence development has been approved. Attached is the Notice of Determination of Application for Development Approval stating the conditions with which the development is required to comply.

Should you be aggrieved by any of the decision or any conditions imposed, you have the right under the *Planning and Development Act 2005* to have the decision reviewed by the State Administrative Tribunal. Applications for review must be submitted to the Tribunal within 28 days of the date on the decision notice. Further information can be obtained by calling the Tribunal on (08) 9219 3111 or by visiting their website at www.sat.justice.wa.gov.au

Your attention is drawn to the fact that this consent constitutes planning approval only and that a Building Permit may be required from the Shire prior to the commencement of construction works. Where relevant, the nominated builder should be provided with a copy of conditions of the Notice of Determination on Application for Development Approval. The Building Permit application cannot be accepted until all relevant planning conditions are cleared by the Shire. Accordingly, please ensure that the drawings and information supplied to the Shire for a building permit address any conditions issued on the planning approval by the Shire to avoid delays in the issue of the Permit. Please note that any amendments proposed outside of the approved plans and conditions of development approval may result in the requirement for a new Planning Application to be submitted for assessment and determination.

Yours faithfully

Ashwin Nair
Manager Statutory Planning and Compliance

a 6 Paterson Street, Mundijong WA 6123 t 08 9526 1111 f 08 9525 5441 e info@sjshire.wa.gov.au www.sjshire.wa.gov.au

6 Paterson Street
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Planning and Development Act 2005
Shire of Serpentine Jarrahdale
Notice of Determination on Application for Development Approval

Property File:	A57300	Application No:	PA18/419
Location:	Lot 504 Yangedi Road, Keysbrook		
Lot:	504	Plan/Diagram:	92831
Vol. No:	2101	Folio No:	541
Application Date:	27 May 2018	Received On:	30 May 2018

Description of Proposed Development: Amendment to Approved Pet Meat Abbatoir to allow the production of pet meat and meat for human consumption.

Use Class: 'Noxious Industry'

Date of Determination: 20 August 2018

That the Manager Statutory Planning and Compliance GRANT Development Approval under Delegated Authority 11.1.1 pursuant to Clause 68(2) of the Deemed Provisions of *Planning and Development (Local Planning Schemes) Regulations 2015* for Proposed Amendment to Approved Pet Meat Abbatoir to allow the production of pet meat and meat for human consumption subject to compliance with the following conditions:-

Conditions:

1. The development is to be carried out in compliance with the plans and documentation listed below and endorsed with the Shire of Serpentine Jarrahdale stamp, except where amended by other conditions of this consent.

Plans and Specifications	P1-P9 received at the Shire's Offices on the 17 August 2018 And the Nutrient and Irrigation Management Plan, Issue 3, dated November 2017.

2. No more than 100 tonnes of meat is to be processed per annum.

3. An updated Environmental Management Plan shall be prepared for the facility and be submitted to and approved by the Shire prior to the use commencing. The plan shall detail how health and amenity impacts will be managed including, odour, noise, dust, waste and pest control. A suitably qualified and experienced person to the satisfaction of the Shire must prepare the Environmental Management Plan.

NOTE 1: If the development the subject of this approval is not substantially commenced within a period of 2 years, or another period specified in the approval after the date of the determination, the approval will lapse and be of no further effect.

6 Paterson Street
Mundijong 6123
Western Australia

Shire of Serpentine Jarrahdale

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Email: info@sjshire.wa.gov.au

NOTE 2: Where an approval has so lapsed, no development must be carried out without the further approval of the local government having first been sought and obtained.

NOTE 3: If an applicant or owner is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the *Planning and Development Act 2005* Part 14. An application must be made within 28 days of the determination.

Signed:  Dated: 20 August 2018

For and on behalf of the Shire of Serpentine Jarrahdale

Shire of Serpentine Jarrahdale
Sustainable. Connected. Thriving!

All enquiries to Development Services on 9526 1111
Our ref: PA19/730: RF:wj

12 December 2019

Harley Dykstra
Po Box 316
KELMSCOTT WA 6991

Via email: benh@harleydykstra.com.au

Dear Sir/Madam,

Proposed Incidental Structures Associated with Abattoir
Lot 504 Yangedi Road, Keysbrook

I refer to your application, received 18 July 2019, for approval to commence development on the aforementioned lot.

In accordance with the provisions of the Shire's Town Planning Scheme No. 2 and the authority delegated to Council under the provisions of the Metropolitan Region Scheme, your application to commence development has been approved. Attached is the Notice of Determination of Application for Development Approval stating the conditions with which the development is required to comply.

Should you be aggrieved by any of the decision or any conditions imposed, you have the right under the *Planning and Development Act 2005* to have the decision reviewed by the State Administrative Tribunal. Applications for review must be submitted to the Tribunal within 28 days of the date on the decision notice. Further information can be obtained by calling the Tribunal on (08) 9219 3111 or by visiting their website at www.sat.justice.wa.gov.au .

Your attention is drawn to the fact that this consent constitutes planning approval only and that a Building Permit may be required from the Shire prior to the commencement of construction works. Where relevant, the nominated builder should be provided with a copy of conditions of the Notice of Determination on Application for Development Approval. The Building Permit application cannot be accepted until all relevant planning conditions are cleared by the Shire. Accordingly, please ensure that the drawings and information supplied to the Shire for a building permit address any conditions issued on the planning approval by the Shire to avoid delays in the issue of the Permit. Please note that any amendments proposed outside of the approved plans and conditions of development approval may result in the requirement for a new Planning Application to be submitted for assessment and determination.

Yours faithfully

HOBrien

Heather O'Brien
Coordinator Statutory Planning

a 6 Paterson Street, Mundijong WA 6123 t 08 9526 1111 f 08 9525 5441 e info@sjshire.wa.gov.au www.sjshire.wa.gov.au

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Planning and Development Act 2005
Shire of Serpentine Jarrahdale
Notice of Determination on Application for Development Approval

Property File:	A57300	Application No:	PA19/730
Location:	Lot 504 Yangedi Road, Keysbrook		
Lot:	504	Plan/Diagram:	92831
Vol. No:	2101	Folio No:	541
Application Date:	8 July 2019	Received On:	18 July 2019

Description of Proposed Development: Incidental Structures Associated with Abattoir

Use Class: 'Noxious Industry'

Date of Determination: 12 December 2019

That the Coordinator Statutory Planning GRANT Development Approval under Delegated Authority 12.1.1 pursuant to Clause 68(2) of the Deemed Provisions of *Planning and Development (Local Planning Schemes) Regulations 2015* for proposed incidental structures associated with abattoir subject to compliance with the following conditions:

Conditions:

1. The development is to be carried out in compliance with the plans and documentation listed below and endorsed with the Shire of Serpentine Jarrahdale stamp, except where amended by other conditions of this consent.

Plans and Specifications	P1-P16 received at the Shire's Offices on the 18 July 2019

2. All stormwater shall be disposed of within the property. Direct disposal of stormwater onto the road, neighbouring properties, watercourses and drainage lines is not permitted.

3. An updated Nutrient Irrigation Management Plan shall be prepared for the facility and submitted to and approved by the Shire of Serpentine Jarrahdale prior to commencement of works.

4. No more than 100 tonnes of pet meat is to be processed per annum.

NOTE 1: If the development the subject of this approval is not substantially commenced within a period of 2 years, or another period specified in the approval after the date of the determination, the approval will lapse and be of no further effect.

NOTE 2: Where an approval has so lapsed, no development must be carried out without the further approval of the local government having first been sought and obtained.

6 Paterson Street
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NOTE 3: If an applicant or owner is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the *Planning and Development Act 2005* Part 14. An application must be made within 28 days of the determination.

NOTE 4: Ceilings and walls of pet food store room and offal cool room to be of smooth impervious finish, free of cracks and crevices to ensure ease of cleaning.

NOTE 5: In relation to condition 3, the Nutrient Irrigation Management Plan shall detail how health and amenity impacts will be managed from the beef lairage. The plan shall be prepared by a suitably qualitied and experienced person to the satisfaction of the Shire of Serpentine Jarrahdale. The plan shall include the here approved structures.

Signed: HBrien Dated: 12 December 2019

For and on behalf of the Shire of Serpentine Jarrahdale

APPENDIX D | LETTER FROM HARVEY BEEF

HARVEY
SINCE BEEF 1919
WESTERN AUSTRALIA

Dear Sir/Madam,

Currently we provide a service in the removal of Raw Material Waste from the Southern Brook Abititor and have done since it opened.

Harvey Beef will continue to provide this service to Southern Brook Abititor for the ongoing future.

Regards

Harvey Industries Group Pty Ltd ABN 64 117 597 985
PO Box 492, Harvey, Western Australia 6220, Seventh Street, Western Australia 6220
Telephone: +61 8 97290000 Facsimile: +61 8 97291810 www.harveybeef.com.au Email: info@harveybeef.com.au

APPENDIX E | NUTRIENT AND IRRIGATION MANAGEMENT PLAN

Bioscience

Integrating Resource Management

Nutrient and Irrigation Management Plan: Lot 504 Yangedi Rd, Keysbrook WA 6126

L & L Blandford
Western Australia
March 2022

Nutrient and Irrigation Management Plan
Lot 504 Yangedi Road, Keysbrook

Prepared by
Didier Alanoix
Environmental Scientist

Project Supervisor
Peter Keating
Managing Director

Bioscience Pty Ltd
488 Nicholson Road
Forrestdale 6112
9397 2446
www.biosciencewa.com

Document Control

Issue	Date	Author	Reviewer	Approved
1	13/07/2017	D. Alanoix	P. Keating	P. Keating
2	19/09/2017	D. Alanoix	P. Keating	P. Keating
3	06/11/2017	D. Alanoix	P. Keating	P. Keating
4	09/01/2020	D. Alanoix	P. Keating	P. Keating
5	12/04/2021	A. Charles	D. Alanoix P. Keating	P. Keating
6	05/08/2021	A. Charles	P. Keating	P. Keating
7	04 /03.2022	P.Keating	P Keating	P.Keating

Issue 7 notes

Following feedback from DPIRD, DWER and the Shire of Serpentine Jarrahdale, further detail has been provided in this NIMP:

- Details fertiliser application applied to the Yangedi Rd farm for the purpose of maintaining pasture for the occasional maintenance of livestock not immediately slaughtered.
- Detailing other animals slaughtered on an occasional and opportunistic basis.
- Comparing the abattoir waste water nutrient balance model with DWER's Whole Farm Gate Nutrient model used for livestock producers.

Contents

This Nutrient and Irrigation Management Plan (NIMP) was prepared by Bioscience Pty Ltd, as per the advice and recommendations of WQPN 33 and WQPN 98, on behalf of L & L Blandford, owner of Lot 504 Yangedi Rd.

1 Summary of the Land Use Proposal

Proponent's name: Larry Francis Blandford & Linda Dorothy Blandford

Site location: Lot 504 Yangedi Rd, Keysbrook WA 6126

Project description: This NIMP is part of a Development Application for a change of use of the existing pet meat abattoir to a meat abattoir designed to process up to 500 tonnes of meat per year for human consumption.

Timetable: Processing on site will start as soon as development approval is obtained. Operations will last over 30 years.

2 Project Setting

The subject land of 50.4 ha is located at the southern extent of the Shire of Serpentine-Jarrahdale, approximately 51 km south of Perth CBD. The western boundary of the site abuts the City of Rockingham local government area. The lot is irregular in shape due to a drainage reserve, forming part of the Punrak Drain which runs along the northern lot boundary (**Figure 1**).

The subject land is zoned 'Rural' in the Metropolitan Region Scheme (MRS), as is the land immediately to the north, west and south. The proposed use is consistent with the zoning of the land under the MRS.

Similarly, the subject land is zoned 'Rural' in the Shire of Serpentine-Jarrahdale's Town Planning Scheme No. 2 (TPS 2). The properties to the north, east and south are also zoned Rural**.** The land to the west is zoned 'Rural' under the City of Rockingham Town Planning Scheme No. 2.

3 Land Use, Nutrient Application, Staff and Livestock

3.1 Land Use and Nutrient Application

The site currently accommodates various rural buildings over its eastern part, including an existing dwelling, workshop, caretaker dwelling, general purpose shed, hay shed, office blocks, toilets facilities and abattoir (replacing the dairy established in 1997) (**Appendix A**). The distribution of existing buildings on the site is illustrated by the Site Plan prepared by Country Drafting and Design in **Appendix B.**

The property is currently used for grazing lambs and beef cattle as well as some pasture cropping/hay growing /cutting all of which would continue following commencement of the meat abattoir use.

The proposed abattoir will be mostly used for processing lambs, although could occasionally process deer, goats and cattle deemed suitable for human consumption.

At delivery, lambs would stay on the subject site for an average time of 12 hours.

Should an incident prevent operations on site, lambs could typically remain within the premises for up to 5 days. In this situation, lambs will be placed into paddocks and graze pastures.

It is also expected that the farm would obtain from clearance sales, up to 200 lambs per year which were not in suitable condition for slaughter. These would be held in paddocks and be fed supplementary feed for up to 8 weeks until their condition improved.

Likewise, some cattle intended for slaughter, upon ante-slaughter inspection are found to be pregnant. These cows would be turned out onto pasture and allowed to have calves. As calves are weaned, the cows will be slaughtered, and the calves slaughtered for veal. This could involve the holding of up to 20 cows and calves per year.

Nutrient inputs on site will consist of the following:

- Nitrogen and phosphorus from irrigation water. Approximately 500-1000 litres of water will be used once a day to sterilise the processing plant. Wastewater (likely to contain traces of manure and urine) will be directed to an existing concrete sump where any solids are left to settle. Water from the sump will be diluted 10-fold with water and then be pumped to 28,000 L tanks, and later used as irrigation water to irrigate 3 ha of land; and,
- Nitrogen and phosphorus from stockpiling solids (captured in the sump).
- Nitrogen and phosphorous from spread granular fertiliser applied in late autumn.

Note that manure produced by grazing lambs and beef cattle is not considered as a nutrient input. Cattle will be fed solely by grazing pastures that grow on phosphate fertilizer, nitrogen fertiliser and nitrogen from leguminous (clover) pasture. Nutrients found in the produced manure would therefore be a recycled output as opposed to an input. As a result, nutrient from grazing manures will not be accounted into the nutrient balance. The same approach can be used for lambs remaining in paddocks pending their processing. Nutrient found in their manure would be an expression of the recycling of nutrients already input on site as fertiliser.

3.2 Staff and Livestock

Approximately 2-3 staff would be employed by the facility which would operate on weekdays, during normal business hours.

Approximately 25,000 lambs should be delivered on site each year to sustain the production of 500 T of meat. On average, around 500 lambs will enter the facility every week. Up to 100 lambs could be slaughtered daily. Note that a qualified slaughter-man could process up to 100 lambs in 4 hours. Please refer to the **Appendix E** between Kane James Moore (qualified slaughter-man, Certificate III in Meat Processing) and Larry Blandford for more details. A lamb weight approximately 40 kg, hence 1,000 T of live animals to produce a dress out carcass weight of 500 T. A works approval is not required.

4 Local Rainfall, Evaporation and Interception

The climate of the area is characterized by Mediterranean climate comprising cool wet winters and hot dry summers. Temperature ranges from cool to cold (i.e. 1 degree) during winter months (May to August) and could reach up to 45 degrees during summer months.

Average annual rainfall (Bureau of Meteorology) recorded at Cloon weather station (located within 10 km of the site) is 828.8 mm, with the majority of rain falling between May and September. **Table 1** shows the monthly average rainfall at Cloon weather station.

Evaporation is likely to be similar to the Perth area, which has an annual evaporation of 1716 mm and exceeds the annual average rainfall by a factor of 2. Monthly rainfall typically only exceeds evaporation during 5 months, from May to September.

Surface soil on site consists mostly of medium to coarse textured sand (Geological Survey of Western Australia). Infiltration in such soils is in the order of 10^{-4}- 10^{-5} m sec^{-1}(Lock 2007). This translates to the capacity of soil to handle rainfall in excess of 36 – 360 mm per hour. Accordingly, in heavy rainfall events (100 year ARI as seen on **Chart 1**), rain water in the undeveloped parts of the property will infiltrate soils and not lead to runoff. As such, there will not be any waterlogged area within the vicinity of the facility. In addition, according to Nearmap, the facility is located 138 m away from the Punrak Drain located to north. The proposed development therefore complies with guidance 18 of WQPN 8.

Table 1: Rainfall and Evaporation at Cloon Weather Station (Bureau of Meteorology)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Rainfall (mm)	18.6	12.0	20.8	40.4	105.1	146.6	171.5	142.4	98.7	45.3	31.1	13.4	828.8
Average Evaporation (mm)	257	218	195	120	78	57	71	102	99	148	189	253	1716

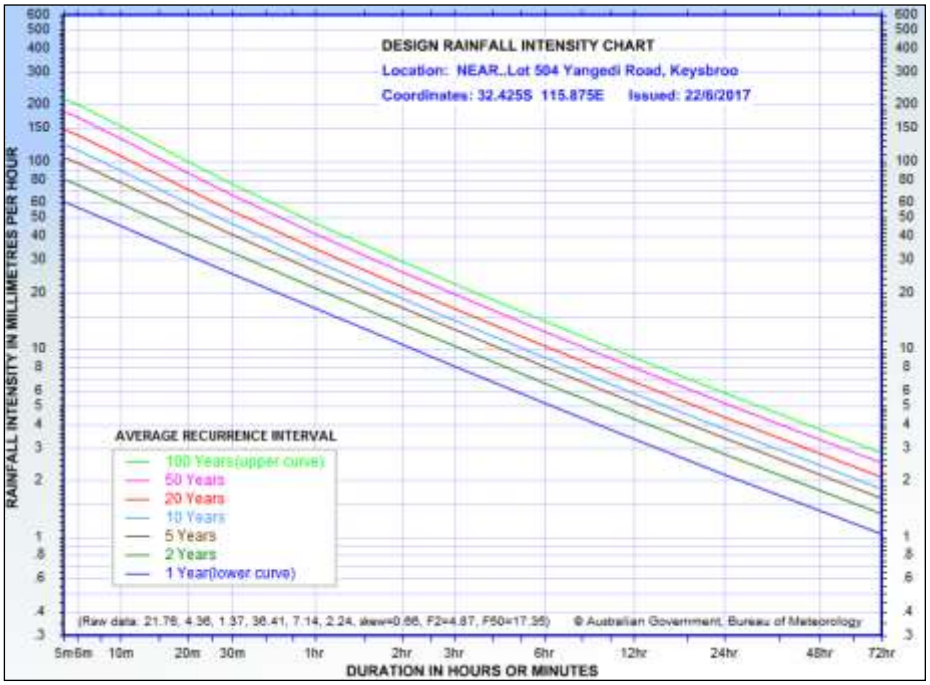

Chart 1: Rainfall intensity chart (BOM)

5 Soils and Landform Description

5.1 Land Contours

Overall, the site slopes towards the west, from an elevation of 17 mAHD to 11 mAHD within 1.5 km (**Figure 2**).

5.2 Soil Type

The Geological Survey of WA's Environmental Geology Map (Rockingham, sheets 20333) describes the site as S8, Bassendean Sand (**Figure 3**).

5.3 PRI

Bassendean sands system is known to have very low PRI, < 2 mg/L (Safstrom and Short 2012).

During a site visit on 8 June 2017, two pits were drilled to a maximum depth of 2 mBGL. Their lithological descriptions are presented in **Table 2** and locations in **Appendix D**. At each pit, two samples, in both strata (i.e. grey sand and brown sand) were collected. PRI were then tested on all four samples. Results provided in **Table 3** confirm Safstrom and Short's 2012 studies.
In previous studies conducted within the premises, a layer of friable, limonite-cemented sand, colloquially called "coffee rock" was found to occur within the site between 1.3 to 6 mBGL. Please see borelogs in **Appendix C**. These cemented organic rich sands are thought to have high PRI.

Table 2: Lithological description

TP1		TP2	
0 - 200 mm	Top soil: Grey Bassendean Sand with organic matter	0 - 200 mm	Top soil: Grey Bassendean Sand with organic matter
200 - 650 mm	Grey Bassendean Sand	200 - 500 mm	Grey Bassendean Sand
650 - 2000 mm	Brown Bassendean Sand (water level at 2000 mm)	500 - 1700 mm	Brown Bassendean Sand (water level at 1700 mm)

Table 3: PRI Results (mg/L)

TP1 (450 - 650 mm)	TP1 (1200 - 1400 mm)	TP2 (200 - 400 mm)	TP2 (1400 - 1600 mm)
1.24	1.24	1.08	1.27

Based on these results, soil was amended by the application of 25 tonnes per hectare of “Iron Man Gypsum”, spread evenly over the site surface using a Marshall spreader. The rate was as advised by Greenacres Turf Farm wo had been involved in SCSIRO investigations earlier, and who supplied the Ironman Gypsum and the spreader. This work is expected to have raised PRI to >30.

5.4 Acid Sulphate Soil

The ASS Risk Map defines the area as Class 2 - moderate to low risk of ASS for depths within 3m below natural ground (**Figure 4**).

5.5 Proposed Earthwork Details

No substantial earthworks are proposed on site.

5.6 Imported Soil Amendments

As stated in 5.3, the irrigation area was amended with Iron Man Gypsum to raise the current PRI to above 30. This is further discussed in Section 7.

6 Water Resources Description and Use

6.1 Sensitive Water Resources

6.1.1 Wetlands

The site contains one multiple use wetland (UFI 15785). This wetland lies over the vast majority of the property (**Figure 5**). Multiple use wetlands are not considered to be constraint to development.

6.1.2 Groundwater Users

Existing groundwater users in the area were assessed through the Department of Water and Environmental Regulations's Water Register database.

Table 4 below presents the groundwater users (Superficial aquifer only) existing within the vicinity of Lot 504 Yangedi Road. Within the area, most users abstract water from the Leederville aquifer.

Table 4: Groundwater Users Abstracting Water within the Superficial Aquifer

Licence No.	Number of Bores	Allocation (kL/yr)	Sub-Area	Approx. Distance from Site
GWL 152020	1	2650	Keysbrook 1	Immediately North

6.2 Seasonal or Occasional Flooding

A review of DWER's floodplain mapping and hydrography did not identify any area subject to flooding or inundation within the immediate vicinity of the site (**Figure 6**). Subsequently, according to the mapping, it seems the Punrak Drain will not flood under a 1:100 yr stormwater event.

6.3 Groundwater Description

6.3.1 Aquifer Description

Within the vicinity of the site, groundwater naturally occurs near the surface to 3.5m below ground depending of the seasons (Davidson 1995). The Superficial Aquifer saturated thickness varies from 10 to 15m (Davidson 1995). Hydraulic conductivity for Bassendean Sands ranges between 8.2 to 16.5m/d (Marillier et al. 2012). Transmissivity is estimated to range between 82 and 250 m^2/day depending of the soil profile; but averages, according to Davidson (1995), are around 120 m^2/d.

6.3.2 Groundwater Flow, Discharge and recharge

According to the Perth Groundwater Map, the groundwater flow within the vicinity of the site is in a north-west direction (**Figure 7**).

The groundwater in the Superficial aquifer is recharged by direct infiltration of rainfall, with peak groundwater levels occurring between August and October. Within the vicinity of the site, low lying areas might experience inundation in winter months, with wetlands and groundwater dependant ecosystem reliant on the seasonal rise in groundwater levels.

6.3.3 Groundwater Level

Based on DWER long term monitoring bore T550i (located approx. 2 km south of the site) groundwater levels fluctuate seasonally. Likewise seasonal variations vary annually. The annual maximum variation was recorded in 1999, with a 1.6 m difference between minimum and maximum groundwater levels.

6.3.4 Groundwater Quality

Groundwater quality was last reported by Bioscience in the 2018 compliance report.
Results are provided in **Tables 5** and locations of the monitoring bores MB1, MB2 and MB3 on **Plate 1**. SGS documentation is provided in **Appendix E**.

Table 5.1: MB1 Water Quality Results

Analyte	13/03/2018*	29/06/2018	28/09/2018	19/12/2018
EC (µS/cm)	210	190	180	190
pH	5.1	4.3	4.9	4.4
TDS (mg/L)	930	340	110	110
Nitrate N (mg/L)	0.25	<0.05	<0.05	<0.05
Tot. N (mg/L)	71	24	9.9	9.9
Ammonium N (mg/L)	1.5	2.8	1.7	1.3
Tot. P (mg/L)	2.3	4.7	2.3	1.7
Free Rea. P (mg/L)	0.12	2.3	1.4	1.2
Potassium (mg/L)	4.0	4.6	4.4	4.6
Calcium (mg/L)	1.5	2.4	2.3	2.6
Magnesium (mg/L)	2.6	2.4	2.6	3.1
Sodium (mg/L)	31	23	21	21
Chloride (mg/L)	57	42	38	36
Sulphate (mg/L)	<1	64	11	14
Iron (mg/L)	0.23	0.66	4.2	2

Manganese (mg/L)	0.012	0.022	0.14	0.03
Copper (mg/L)	<0.001	<0.001	<0.005	0.004
Zinc (mg/L)	<0.005	0.008	0.02	0.011

Table 5.2: MB2 Water Quality Results

Analyte	13/03/2018*	29/06/2018	28/09/2018	19/12/2018
EC (µS/cm)	430	600	970	840
pH	4.8	5.1	5.2	4.3
TDS (mg/L)	510	760	580	500
Nitrate N (mg/L)	<0.05	<0.05	<0.05	<0.05
Tot. N (mg/L)	12	22	9.1	8.2
Ammonium N (mg/L)	1.3	0.47	0.95	1.1
Tot. P (mg/L)	3.0	14	6.5	4.0
Free Rea. P (mg/L)	2.4	10	5.8	0.82
Potassium (mg/L)	14	28	19	24
Calcium (mg/L)	21	45	120	65
Magnesium (mg/L)	18	19	44	34
Sodium (mg/L)	28	39	19	25
Chloride (mg/L)	67	91	43	53
Sulphate (mg/L)	110	66	490	390
Iron (mg/L)	0.32	3.9	3.3	5
Manganese (mg/L)	0.18	0.060	0.051	0
Copper (mg/L)	<0.001	0.003	<0.005	0.001
Zinc (mg/L)	<0.005	0.007	0.01	0.008

Table 5.3: MB3 Water Quality Results

Analyte	13/03/2018*	29/06/2018	28/09/2018	19/12/2018
EC (µS/cm)		410	390	
pH		5.0	5.1	
TDS (mg/L)		430	240	
Nitrate N (mg/L)		19	<0.05	
Tot. N (mg/L)		50	11	
Ammonium N (mg/L)		0.20	0.26	
Tot. P (mg/L)		5.1	1.5	
Free Rea. P (mg/L)		1.7	0.91	
Potassium (mg/L)		23	14	
Calcium (mg/L)		28	19	
Magnesium (mg/L)		10	7.2	
Sodium (mg/L)		21	45	
Chloride (mg/L)		41	110	
Sulphate (mg/L)		34	24	
Iron (mg/L)		0.13	0.38	
Manganese (mg/L)		0.026	0.016	
Copper (mg/L)		0.001	<0.005	
Zinc (mg/L)		0.009	<0.01	

** Sample collected just after the construction of the bore hence not used in calculations for the trigger values. This conservative approach as bore MB1 revealed very high concentrations of nutrient after analysis.*

Dry during monitoring

Table 6 presents the trigger values derived from MB1. The mean and standard deviation for nutrient concentrations were calculated after the first four sampling events. Contingency thresholds were then be obtained by adding two standard deviations to the mean value of each analyte of concerns (i.e TN TP, nitrate N, ammonium N and free reactive P) observed in bore MB1.

Table 6: Trigger values calculated from the MB1 dataset.

Analyte	Average	Standard deviation	Trigger values
Tot. N (mg/L)	14.6	8.14	**30.89**
Ammonium N (mg/L)	1.9	0.78	**3.49**
Tot. P (mg/L)	2.9	1.59	**6.08**
Free Rea. P (mg/L)	1.6	0.59	**2.81**

TN and Ammonium-N concentrations in bore MB2 and MB3 did not exceed the trigger values during the review period. Except for a couple of occasions, TP and free reactive P were below the defined thresholds. When exceeded, the contingency measure as defined in the NIMP (Issue 3) was implemented on site (i.e. irrigation within the irrigation area stops until further dilution of the tank water is done). As seen in the December 2018 results, TP and free reactive P were below the trigger values derived from MB1. The contingency actions seem to be successful at managing the risk of nutrient export.

The objectives of the *Water quality improvement plan for the rivers and estuary of the Peel-Harvey system - phosphorous management (*EPA 2008)("WQIP") were not compromised by the site development.

Plate 1: Monitoring bores locations

6.4 Source of Irrigated Water

The site is associated with a groundwater licence, GWL 66850, allowing abstraction of 5656 kL of water per year from the Superficial aquifer.

The existing water supply on the site will be sufficient to accommodate the change of use.

6.5 PDWSA

The site is not within or near any Public Drinking Water Supply Areas.

7 Site Management

7.1 Abattoir Operations and Waste Management

After arrival, most animals will be processed the same day. Any manure excreted will therefore be isolated from the natural ground. Leaching of nutrient will not happen.

During processing, no blood or offal actually hits the ground as it is all captured in removable waste bins under chutes located beneath a grated floor in the processing area and stripping room (**Plates 2**). The abattoir process is a completely closed process with all animal waste and offal being placed into separate containers which are disposed offsite.

Any waste (manure) left will be collected, stockpiled and spread when dry. In accordance with guidance 22 of WQPN 98, manure will not be applied closer to 100 meters to waterways and sensitive wetlands.

Should an incident prevent operations on site, lambs could typically remain within the premises for up to five (5) days. In this situation, lambs will be placed into paddocks and graze pastures. Lambs will not be held within the proposed irrigation area, and therefore will not graze on pasture that has had wastewater applied. When holding is required, lambs will remain in the paddock situated immediately west of the processing plant (**Plate 3**).

In instances where blood and offal bins are not emptied daily, they are kept overnight in the fully enclosed cool room. The completed packaged product is collected from the site several times per week for delivery to the market.

Plates 2: Bin beneath floor

Hides and skins are placed in separate waste bins and are removed on a daily basis by Western Australian Skin and Hide Industries.

Plate 3: Lambs holding yard (only if needed)

7.2 Irrigation System

Any wastewater from the wash-down is captured by the concrete floor of the processing area and directed via the cross fall of the floor to an existing sump where any solids are left to settle (**Plates 4**). Locations are on **Appendix A** (12). Water accumulating into the sump is routinely diluted by a factor of 10 and be pumped into 28,000 L tanks. Water stored in these tanks is then be used to irrigate 3 ha of land through standpipes.

Irrigation will not occur during rainfall or plant dormancy period. Note that, slaughtering of lambs and processing will occur up to 5 days per week. Accordingly, wash-down will occur up to 5 times weekly.

Also note, most of the solid wastes will be removed manually prior to rinsing of the operation area. These solid wastes will be put in the bins, while residues will accumulate into the sump. Residual wastes floating on the surface will then be removed from the sump and put on the concrete hardstand for composting. When dried and composted, solid wastes will be spread on pastures. The hardstand will be located near the sump.

In addition, solids accumulating in the bottom of the sump will be scraped out weekly, stockpiled and composted on site and then spread on the property. In accordance with guidance 22 of WQPN 98, manure will not be applied closer to 100 meters to waterways and sensitive wetlands.

Also, given the low nutrient mass loading (far below the trigger's established for by the Department for the Peel Harvey Catchment, refer to Section 9.1) produced by the abattoir operations, a two-stage method as defined by the WQPN 98 will not be required as these is insufficient Biochemical Oxygen Demand (BOD) to enable anaerobic treatment.

Plates 4: Concrete sump

7.3 Fertiliser Application from irrigation water

7.3.1 Irrigation Water

The WQPN 98 recommends that large abattoirs proposing to use wastewater for irrigation be located on stable soils suited to wastewater disposal. It is noted that the proposal is located on Bassendean soil which has low nutrient retention abilities and a high nutrient export hazard potential.

For this reason, the irrigation area has been amended with Iron Man Gypsum to raise the current PRI to above 30.

In CSIRO (2010) studies, results indicated that NUA (Neutralised Used Acid, Iron Man Gypsum being an NUA effluent) was a promising amendment material for the reduction of nutrient and trace element leaching and increased solute retention within sandy Swan Coastal Plain soils. Phosphate P and TN in leachates from NUA-amended turf sites were reduced by 97% and 82%, respectively, relative to control sites.

Note that the NUA was incorporated into the soil to a depth of approximately 10-15 cm using a rotary hoe with a roller mounted on the back to allow the depth of incorporation to be better controlled.

7.3.2 Phosphate fertilizer

The entire site is too vast to be covered with standpipes. For this reason, the remaining pastured section of the site (~ 40 ha) will be fertilised with phosphate fertilizer, and growth will be dependant of rainfall. A maximum of 30 Kg of superphosphate/ha/yr (equivalent to 2.55 kg/ha/yr of elemental P will be applied on site. This rate matches plant needs, and the

recommended application rates according to the Peel Harvey Catchment Water Quality Improvement Policy. Note that phosphate fertilizer will not be applied within 50 m of the Punrak drain.

8 Drainage and Contaminant Leaching Control

8.1 Drainage Management

Generated washdown wastewater is isolated from the natural ground. Wastewater is directed to the sump through a drainage system made of concrete. The sump itself is impervious and made of concrete.

8.2 Contaminant Leaching Control

8.2.1 Fertiliser Use Efficiency

Application rate of phosphate fertilizer will not exceed the nutrient input rate established for the Peel Harvey catchment, i.e. 6.5 kg/ha/yr for phosphorous and 45 kg/ha/yr for nitrogen. It is also noted that irrigation will occur more than 50 m away from the Punrak Drain. Runoff of irrigation water to the drain will therefore not occur.

Manure collected from the sump will not be spread over areas fertilised by phosphate fertilizer. Likewise, manure application rate will comply with the nutrient input rate established for the Peel Harvey catchment.

As discussed previously, leaching to groundwater will be prevented by minor soil amendments that will raise the PRI to a value of >30.

8.2.2 Water Use Efficiency

In regard to the abattoir plant, approximately 500 – 1000 litres of water will be used per day to wash the room and the plant, which is significantly less than the water requirements of the dairy, which was washed down twice a day after milking.

The volume of water used to irrigate the 3 ha of land will not exceed the groundwater licence allocation of 5656 kL/annum.

9 Protection of Natural Water Resources

As mentioned by the Department of Water and Environmental Regulations in the "New Summary of Submissions PA17/158", The *Peel-Harvey EPP* establishes phosphorous loading targets for the Peel-Harvey Estuary System to be adhered to by new proposals. To comply with these total loading targets, new operations within the Serpentine River Catchment are required to achieve an export rate for total phosphorous (TP) of 0.29 kg/ha/year, as specified within the Department's report *Hydrological and nutrient modelling of the Peel-Harvey catchment* (DoW, 2011). For TN concentration in lowland rivers of south-west Australia for slightly disturbed ecosystems the ANZECC guideline value of 1.2 mg/L is used.

In addition, the Department's report *Hydrological and nutrient modelling of the Peel-Harvey catchment* (DoW, 2011) has established nutrient input (or application) rates for the Peel Harvey catchment to achieve the necessary nutrient export loads. Application rate must not exceed 6.5 kg/ha/year for phosphorous and 45 kg/ha/year for nitrogen.

It is emphasised that export rate calculation involved extensive datasets that are simply not available. However, the nutrient balance developed in the following section provides confidence that the nutrient input rate on site complies with the rate established by the Department of Water and Environmental Regulations for the Peel Harvey catchment.

9.1 Nutrient Balance

This NIMP uses a simple yet robust analytical model to quantify nutrient inputs by the irrigation water. The model encompasses every aspect of the operations and focuses on nutrient inputs from the phosphate fertilizer, the irrigation water and the spreading of manure. Also, as discussed earlier, manure produced by beef cattle is not considered as a nutrient input. Cattle will be fed solely by grazing pastures that grow on nitrogen from leguminous (clover) pasture. Nutrients found in the produced manure would therefore be a recycled output as opposed to an input. As a result, nutrient from cattle manure is not be accounted into the nutrient balance. The same approach can be used for lambs remaining in paddocks pending their processing. Nutrient found in their manure would be an expression of the recycling of nutrients already existing on site. For these reasons and as opposed to standard practice, the use of a farm gate nutrient balance is deemed not appropriate, as the property is not operating as a farm in the sense of that following references: Ovens et al, *Farm gate nutrient balances in south west Western Australia – An overview*, August 2008 and Weaver et al, *Farm gate nutrient balances in south west Western Australia – understanding nutrient loss risk within agricultural land uses*, August 2008.

9.1.1 Phosphate fertilizer Application Rate

The phosphate fertilizer will be applied on approximately 40 ha of pastureland. The application rate and nutrient inputs are as per **Table 7**. As seen in the table, nutrient inputs within the fertilized areas will not exceed the rate established for Peel Harvey catchment.

Table 7: Nutrient input rate from phosphate fertilizer

Item	Description	Unit	Value	Comments
A	Phosphate fertilizer rate	kg/ha/yr	30	
B	% Elemental P	%	8.5	
C	Grassboost fertilizer	kg/ha/yr	30	
C	% Elemental N	%	45	
D	P input	kg/ha/yr	2.55	=A*(B/100)
E	N input	kg/ha/yr	13.5	=A*(C/100)

9.1.2 Irrigation Water and Manure spreading

On 23 July 2021, a site visit was conducted and the washdown water was sampled at the end of the working day. Wastewater was tested for:

- pH
- Total Dissolved Solids (TDS)
- Electrical Conductivity (EC)
- Total Nitrogen (Total N)
- Ammonium Nitrogen (NH4-N)
- Nitrate Nitrogen (NO3-N)
- Total Phosphorous (Total P)
- Free Reactive Phosphorous (PO4-P)
- Potassium (K)
- Iron (Fe)
- Sodium (Na)
- Manganese (Mn)
- Copper (Cu)
- Zinc (Zn)
- Magnesium (Mg)
- Calcium (Ca)
- Chloride (Cl)
- Sulphate (SO4)

Results are presented in **Table 8**. As it was sampled at the end of an operating day, those results are deemed representative of any operating day of the abattoir.

Table 8: Wastewater quality results

Analyte	23/07/2021
EC (mS/cm)	0.599
pH	6.94
TDS (mg/L)	376
Nitrate N (mg/L)	0.086
Tot. N (mg/L)	2.456
Ammonium N (mg/L)	2.37
Tot. P (mg/L)	3.13
Free Rea. P (mg/L)	3.13
Potassium (mg/L)	21.3
Calcium (mg/L)	10.8
Magnesium (mg/L)	6.82
Sodium (mg/L)	75.2
Chloride (mg/L)	<0.01
Sulphate (mg/L)	64.03
Iron (mg/L)	0.715
Manganese (mg/L)	0.058
Copper (mg/L)	0.017
Zinc (mg/L)	0.324

Table 9.1: Inputs

Item	Description	Unit	Value	Comments
F	Volume of washdown	L	1000	From proponent
G	Number of operating days	days	250	From proponent
H	Water license allocation	kL	5,656,000	-
I	[P] in wastewater	mg/L	3.13	From Table 8
J	[N] in wastewater	mg/L	2.456	From Table 8
K	[P] in bore water	mg/L	2.9	From Table 6
L	[N] in bore water	mg/L	14.6	From Table 6

Table 9.2: Yearly nutrient load from water

Item	Description	Unit	Value	Comments
M	Total P in yearly produced wastewater	mg/yr	782500	I * F * G
N	Total N in yearly produced wastewater	mg/yr	614000	J * F * G
O	TP in total bore water	mg/yr	16402400	K * H[(a)]
P	TN in total bore water	mg/yr	67306400	L * H

(a) Worst case scenario for nutrient load: the applicant irrigates to the maximum of his water license entitlement

Table 9.3: Yearly TP and TN load from water

Item	Description	Unit	Value	Comments
Q	Total P	kg/yr	17.19	(M + O)/1000000[(b)]
R	Total N	kg/yr	83.19	(N + P)/1000000[(b)]

(b) Conversion from mg to kg

Table 9.4: Yearly TP and TN from solid waste

Item	Description	Unit	Value	Comments
S	Solid waste left after cleaning	kg/d	2	From Issue 5 and WQPN33, as detailed in this report, most of the solid waste are disposed of offsite as it is collected in bins
T	Total N in faeces	kg/d	0.014944	
U	Total P in faeces	kg/d	0.002989	
V	Total N in faeces	kg/yr	3.74	
W	Total P in faeces	kg/yr	0.74	

Table 9.5: TP and TN yearly load from solid and liquid waste, and irrigation water

Item	Description	Unit	Value	Comments
X	Total P from liquid and solid waste	kg/yr	17.93	Q + W
Y	Total N from liquid and solid waste	kg/yr	86.93	R + V

If an irrigated area of 3 ha is considered, the nutrient loading rate from wastewater and solid waste produced onsite would be of 5.98 kg/ha/yr for TP and 28.98 kg/ha/yr for TN. Irrigation area is shown on **Plate 5**.

Table 10: [P] and [N] in irrigation water

Item	Description	Unit	Value	Comments
P	[P] in irrigation water	mg/L/yr	2.9	Q/(F*G +H)
Q	[N] in irrigation water	mg/L/yr	14.09	R/(F*G + H)

9.2 Conclusion of Nutrient Balance

As seen above (**Tables 7 & 9**), nutrient inputs on site do not exceed the rate established by the Department of Water and Environmental Regulations for the Peel Harvey catchment. Water resources are therefore protected.

Also note that the WQPN 22 requires that irrigation with nutrient rich wastewater takes place where groundwater is at least 2 m below the surface. It is noted that the irrigated area is elevated at 17 mAHD, whereas maximum groundwater is 14 m AHD, thus at least 3 m below the surface. As seen above, nutrient inputs from irrigation water were quantified (**Table 10**) using results from the wastewater analysis and past monitoring results. The analytical modelling indicates that the irrigation water will have N and P concentrations of around 14.09 mg/L and 2.9 mg/L respectively. These concentration values are deemed acceptable according to the trigger values calculated from past monitoring data of the site. However, the irrigation area will be amended with iron man Gypsum to raise the PRI at 10 at least.
Also note that the nutrient balance is conservative: it considers maximum irrigation and does not consider the nutrient stripping from the vegetation present in the proposed irrigation area.

Plate 5: Proposed irrigation area

10 Contaminant Transport Model

Nutrient inputs comply with the rates established for the Peel Harvey catchment. A contaminant transport model is therefore not required.

11 Vegetation Management

Vegetation on site will mainly be managed by grazing. Some hay cutting will occur prior to the summer months.

12 Pesticides and Storage Use

Pesticides will not be used on site.

13 Note regarding Production of Liquid Effluent

It is emphasized that the operation on site will be consistent with SPP2.1 in term of nutrient emissions:

The proposed abattoir will not have to manage a substantial volume of solid and liquid waste. Unlike what is assumed by the WQPN 98, liquid waste produced by the proposed abattoir will not include blood, offal, contaminated stormwater, and wash-down from yard and stock transport vehicles. As detailed in the NIMP, only one wash-down of the secondary processing

room will happen at the end of the workday. However, no blood or offal will hit the ground as it will be all captured in removable waste bins under chutes located beneath a grated floor in the processing area and stripping room. The abattoir process will be a completely closed process with all animal waste and offal being disposed offsite.

Liquid waste produced on site will result from the wash-down of the operation area and will consist of urine residues. Note that most of the solid wastes occurring in the operation area will be removed manually by sweeping and placed into bins prior to rinsing. We estimated that 2 kg of faeces residues would be transported from the operation area to the sump every working day. This is of course a conservative value. Nonetheless, modeling using such a value still predicted a mass loading not exceeding the Department's input rate established for the Peel Harvey Catchment.

14 Post-Development Monitoring Program

To ensure that the objectives of the Peel Harvey Catchment WQIP are met by the site operations, the monitoring program is designed to ascertain that nutrient export (if any) does not exceed the export rate established by the Department.

To this end, three monitoring bores (MB1, MB2, MB3) were installed on site. Locations of these bores are as per **Plate 1**. Bore MB1 and bores MB2 and MB3 are respectively upstream and downstream of the irrigation area.

The monitoring bores were constructed as per DWER standards (WQPN30): screened at least two meters below minimum water level, gravel packed, bentonite sealed, cement grouted and fitted with locked steel bore protector.

Note that as explained previously, liquid waste produced on site is not nutrient-rich as such; the extensive monitoring required by the WQPN 22 is therefore not required. The monitoring program is summarized in **Table 9**. Groundwater levels will be recorded seasonally, once every three months for the first two years.

Water samples from the monitoring bores will be collected quarterly. The chemistry analysis will include the following analyte and will be tested by a laboratory accredited to do water chemical analysis by the National Association of Testing Authorities (NATA).:

- pH
- Total Dissolved Solids (TDS)
- Electrical Conductivity (EC)
- Total Nitrogen (Total N)
- Ammonium Nitrogen (NH4-N)
- Nitrate Nitrogen (NO3-N)
- Total Phosphorous (Total P)
- Free Reactive Phosphorous (PO4-P)
- Potassium (K)
- Iron (Fe)

- Sodium (Na)
- Manganese (Mn)
- Copper (Cu)
- Zinc (Zn)
- Magnesium (Mg)
- Calcium (Ca)
- Chloride (Cl)
- Sulphate (SO4)

An annual summary will be submitted to DWER each year.

Table 9: Monitoring commitment

Monitoring Requirements	Monitoring Point	Frequency
Measuring of water levels	MB1, MB2, and MB3	Quarterly for the first two years (must include two typical winters)
Sampling and water quality analysis	MB1, MB2, and MB3	Quarterly for the first two years, then annually if impacts are not observed
Annual summary	n/a	Annually

15 Contingency Plans

The objective of contingency planning is to provide assurance that the *Water quality improvement plan for the rivers and estuary of the Peel-Harvey system - phosphorous management (*EPA 2008) ("WQIP") will not be compromised because of the site development.

The attainment of this objective cannot be judged without reference to existing groundwater nutrient values due to past activities and surrounding land uses. The ongoing collection of data from upstream and downstream monitoring bores will establish background nutrient levels in groundwater.

Contingency thresholds were established after a full year of monitoring using water quality data from MB1. The mean and standard deviation for nutrient concentrations were calculated after the first four sampling events. Contingency thresholds were then obtained by adding two standard deviations to the mean value of each analyte of concerns (i.e TN, TP, nitrate N, ammonium N and free reactive P) observed in bore MB1. Established trigger values were communicated in the first annual monitoring report and will be refined when more data will be collected.

Should downstream samples exceed the trigger values on two consecutives occasions the Shire of Serpentine Jarrahdale will be notified and contingency measures (as follows) will be implemented:

- Spreading of manure will stop. Composted manure will remain on the hardstand until further improvement of groundwater quality.
- Irrigation water will be tested by a laboratory accredited by NATA to do water chemical analysis for nitrogen and phosphorus concentrations. Should concentrations exceed modeled values, irrigation with wastewater will stop. Irrigation water will remain in the tanks. After re-testing showing improvements to modeled values, irrigation with wastewater will re-start, otherwise wastewater will be disposed of offsite.

References

CSIRO 2010 - Douglas, G., L. Wendling, J. Adeney, K. Johnston and S. Cole man. 2010. Investigation of the Mineral-Based By-Product NUA as a Soil Amendment: Results from the Bullsbrook Turf Farm Trial Extension 2008-2009. July 2010. CS IRO: Water for a Healthy Country National Research Flagship. 82 pp.

Dairy Australia (2008) - Effluent and Manure Management Database for the Australian Dairy Industry. Chapter 2.1: Solid-Liquid Separation Systems

Davidson W.A. 1995 *Hydrogeology and Groundwater Resources of the Perth Region, Western Australia*, Western Australia Geological Survey, Bulletin No. 142.

Lock, B. L. (2007) *Handbook of Geotechnical Investigations and Design Tables, Taylor and Francis Group, London UK*

Safstrom R. and Short N. 2012. Agriculture Futures: Potential Rural Land Uses on the Palusplain. Department of Agriculture and Food.

WPQN 98 - Water Quality Protection Note 98 (2007). Rural Abattoirs, the Department of Water and Environmental Regulations

ELSEVIER 2020 – K.A Marsden et al. *Lambs urination frequency, volume, N excretion and chemical composition: Implications for subsequent agricultural N losses.*

APPENDIX A

SALES ORDER / PICKING SLIP

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NOTE: ALL COPIES MUST BE RETAINED - IF ERROR CANCEL DOCUMENT AND PLACE ALL COPIES IN MASTER FILE

Document #: 3455

Date	Customer	Address

Quantity	Description
	40 Skin

NOTE:

Received By: Customer Signature:

Sales Person Signature:

APPENDIX B

Western Australian Skin & Hide Industries **Tel.: 94378999**

BREAKDOWN SHEET

SUPPLIER NAME:Southern brook **DATE: 30/01/22**
Tel.: **Goods Inwards Dockets Attached:**
Week Ending :10/02/2022 **Doc. No.'s: 3453/3451/3452**

SHEEP **LAMBS**

Description	Quantity & Value			Description	Quantity & Value		
Bare to 1/4"		$0.25	$0.00	**Kangroo Skins**			
1/4" - 1/2"		$0.25	$0.00	Small Grey		$0.25	$0.00
1/2" - 1.0"		$1.50	$0.00				
1.0" - 2.0"		$2.50	$0.00				
2.0" up		$3.50	$0.00				
3.0" up		$4.50	$0.00				
Rejects			$0.00				
Bare - 1/2"	34	$0.50	$17.00	**Goat Skins**			
1/2" to 1.0"	51	$1.50	$76.50	Small		$0.50	$0.00
1.0" to 2.0"	25	$3.50	$87.50	Medium		$0.50	$0.00
2.0" up		$3.00	$0.00	Large		$0.50	$0.00
3.0" up		$4.00	$0.00				
XB 0" - 1.0"		$0.25	$0.00				
XB 1.0"- 2.0"		$0.50	$0.00				
Blacks		$0.50	$0.00				
XB Rejects		$0.25	$0.00				
TOTAL	***110***		***$181.00***	**Deer Skins**		$3.00	$0.00
Kangaroo Tails			$0.00				
Horse Pieces			$0.00				
	0		**$0.00**				
TOTAL	***110***		***$181.00***	***TOTAL***	***0***		***$0.00***

CATTLE HIDES()

				Description	Quantity	Value
REJECTS		$1.00	$0.00	Description	Quantity	Value
10KG DOWN		$1.00	$0.00	SHEEP(Salted)	110	$181.00
10-15 KG		$2.00	$0.00	GOAT	0	$0.00
15-20 KG		$3.00	$0.00	CATTLE	5	$40.00
20-28 KG		$5.00	$0.00	DEER	0	$0.00
29-35 KG	5	$8.00	$40.00	KANGAROO TAILS	0	$0.00
TOTAL	**5**		**$40.00**	HORSE PIECES	0	$0.00
HORSE HIDES				TOTAL	115	$221.00
QUARTER		$0.05	$0.00	**GST 10%**		**$22.10**
WHOLE	**0**		**$0.00**	**TOTAL**		**$243.10**

APPENDIX C

HARVEY BEEF

Dear Sir/Madam,

Currently we provide a service in the removal of Raw Material Waste from the Southern Brook Abititor and have done since it opened.

Harvey Beef will continue to provide this service to Southern Brook Abititor for the ongoing future.

Regards

Harvey Industries Group Pty Ltd ABN 64 117 597 985
PO Box 492, Harvey, Western Australia 6220, Seventh Street, Western Australia 6220
Telephone: +61 8 97298000 Facsimile: +61 8 97291810 www.harveybeef.com.au Email: info@harveybeef.com.au

APPENDIX D

	PROPERTY NUTRIENT BALANCE		Lot 504 Yangedi Rd Abattoir				
	FOR		typical year or the year the nutrient balance is for				if time peric
	PROPERTY AREA (ha)		52				
		Type	Weight (kg/animal)	Number/yr	Weight (kg/yr)	N content	P content
	Livestock 1	Lambs	55	15000	825,000	10.00%	1.50%
	Livestock 2	Cows	790	100	79,000	10.00%	1.50%
	Livestock 3	Goats	70	50	3,500	10.00%	1.50%
	Livestock 4	Deers	90	20	1,800	10.00%	1.50%
INPUTS	Fertiliser 1 (to 40 ha)	Superphosphate			1,200	0	8.50%
	Fertiliser 2 (to 40 ha)	Grassboot			1,200	30%	0
	Pellets	EazyOne			800	2.40%	0.10%
	TOTAL INPUT						
	Meat (animal product) 1				500,000	13.40%	2.50%
OUTPUTS	Rendering				400,000	6.00%	1.00%
	TOTAL OUTPUT						
SURPLUS	TOTAL INPUT - TOTAL OUTPUT						
SURPLUS PER HA							

ɔd is not a year change kg/yr to kg in table below

N (kg/yr)	P (kg/yr)	Reference/Comment
82500	12375	
7900	1185	
350	52.5	
180	27	
0	221	
360	0	
19.2	1	
91309.2	13861.3	
67000	12500	
24000	4000	
91000	16500	
309	-2639	This represents the amount of nutrient available for leaching or migration offsite
N (kg/ha/yr)	P (kg/yr)	
6	-51	