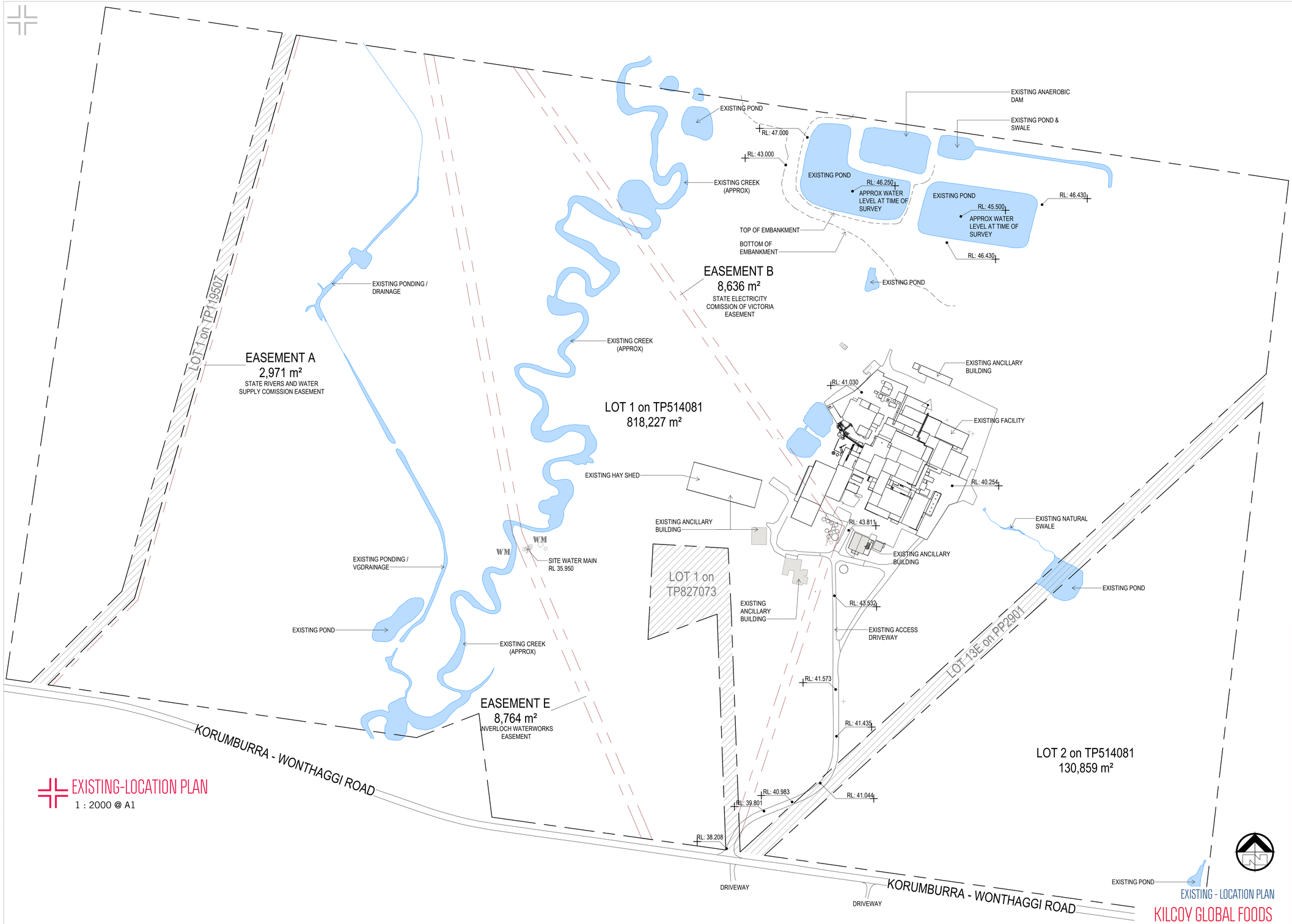


EXISTING-LOCATION PLAN

1 : 2000 @ A1

SITE INFORMATION

LOT 1 on TP514081	**818,227 m²**
LOT 2 on TP514081	**130,859 m²**
FLOOR AREA	**13,284 m²**
Admin Office	270 m²
Amenities	496 m²
Boiler Building	113 m²
Boning Room	1,058 m²
Bulk Carton Store	315 m²
Chillers	1,401 m²
COO Office	73 m²
Freezers	3,731 m²
Kill Floor	1,306 m²
Laundry	32 m²
Marshalling Area	290 m²
Plant	547 m²
QA Office	58 m²
Rendering Building	1,128 m²
Stock Yards	2,176 m²
Warehouse	291 m²

EXISTING - LOCATION PLAN

KILCOY GLOBAL FOODS

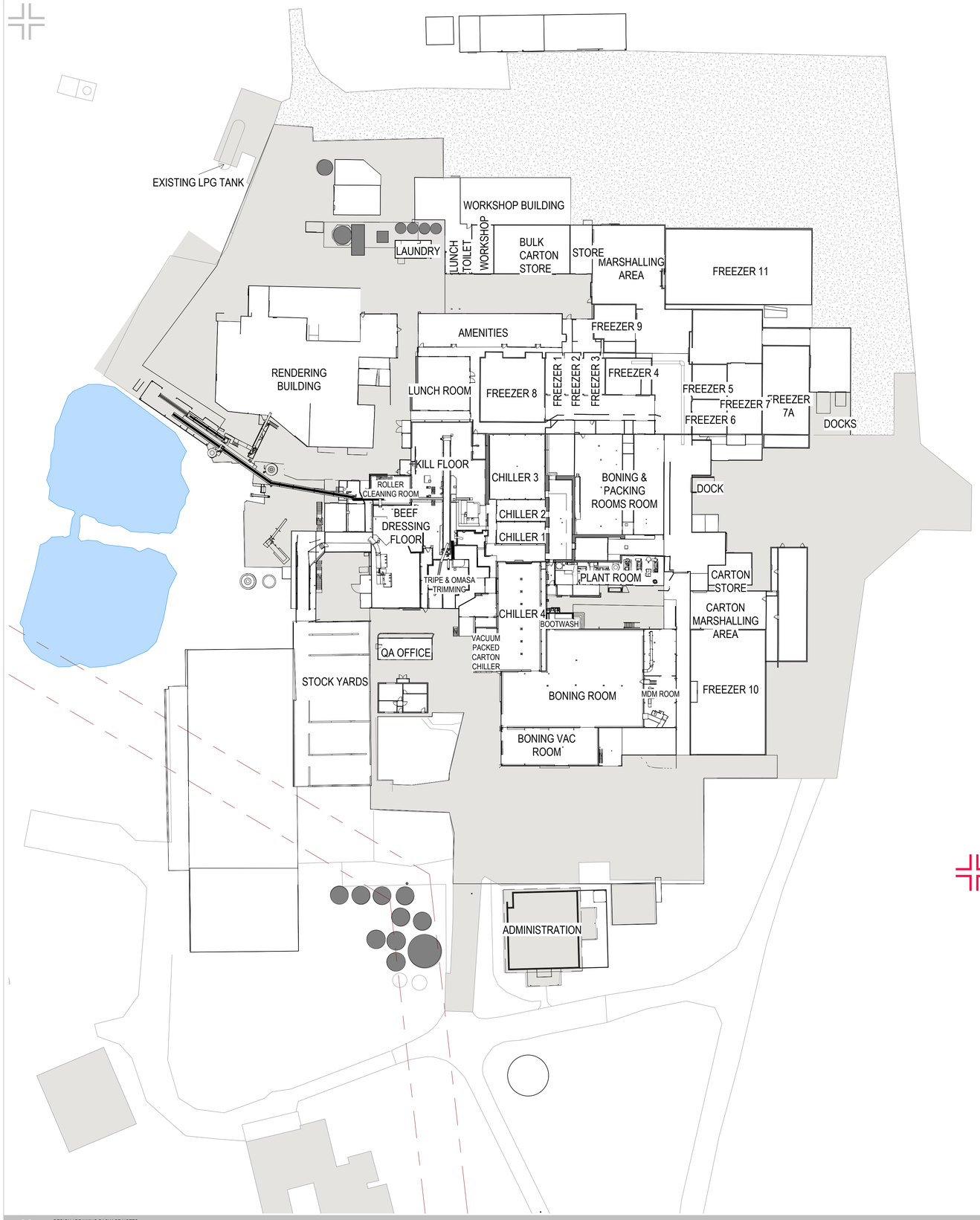
2140 KORUMBARRA-WONTHAGGI ROAD
LANCE CREEK VIC 3995

DWG N° 11466-10-9 by HAL
DATE 07/03/2023

space frame
DESIGN + CONSTRUCT SOLUTIONS

DESIGN / DRAWING PACKAGE NOTES
1. **COPYRIGHT © SPACEFRAME BUILDINGS PTY LTD** THIS DOCUMENT IS CONFIDENTIAL AND REMAINS THE PROPERTY OF SPACEFRAME BUILDINGS PTY LTD. PERSONS RECEIVING IT MAY NOT REPRODUCE, COPY, OR DISCLOSE WITHOUT THE WRITTEN CONSENT OF SPACEFRAME BUILDINGS PTY LTD.
2. REFER TO ALL SPACEFRAME DRAWINGS FOR ADDITIONAL NOTES, LEGENDS, AND DETAILS.
3. ALL NOTES ARE 'UNLESS NOTED OTHERWISE', AND IF DISCREPANCIES ARE FOUND, CONSULT SPACEFRAME BUILDINGS IMMEDIATELY.
4. THESE DRAWINGS INTENDED FOR USE WHEN PRINTED IN COLOUR. SOME INFORMATION MAY BE UNINTELLIGIBLE UNLESS PRINTED IN COLOUR.
5. IF IN DOUBT, ASK SPACEFRAME BUILDINGS.

7/03/2023 11:09:14 AM C:\Users\lowmassh\Documents\11466_NEW_CENTRAL_MODEL_HalamLowmass.rvt



EXISTING-SITE PLAN

1 : 500 @ A1

SITE INFORMATION

LOT 1 on TP514081	**818,227 m²**
LOT 2 on TP514081	**130,859 m²**
FLOOR AREA	**13,284 m²**
Admin Office	270 m²
Amenities	496 m²
Boiler Building	113 m²
Boning Room	1,058 m²
Bulk Carton Store	315 m²
Chillers	1,401 m²
COO Office	73 m²
Freezers	3,731 m²
Kill Floor	1,306 m²
Laundry	32 m²
Marshalling Area	290 m²
Plant	547 m²
QA Office	58 m²
Rendering Building	1,128 m²
Stock Yards	2,176 m²
Warehouse	291 m²

EXISTING - SITE PLAN

KILCOY GLOBAL FOODS

2140 KORUMBARRA-WONTHAGGI ROAD
LANCE CREEK VIC 3995

DWG N° 11466-11-9 by HAL
DATE 07/03/2023

space frame
DESIGN + CONSTRUCT SOLUTIONS

DESIGN / DRAWING PACKAGE NOTES
1. **COPYRIGHT © SPACEFRAME BUILDINGS PTY LTD** THIS DOCUMENT IS CONFIDENTIAL AND REMAINS THE PROPERTY OF SPACEFRAME BUILDINGS PTY LTD. PERSONS RECEIVING IT MAY NOT REPRODUCE, COPY, OR DISCLOSE WITHOUT THE WRITTEN CONSENT OF SPACEFRAME BUILDINGS PTY LTD.
2. REFER TO ALL SPACEFRAME DRAWINGS FOR ADDITIONAL NOTES, LEGENDS, AND DETAILS.
3. ALL NOTES ARE UNLESS NOTED OTHERWISE, AND IF DISCREPANCIES ARE FOUND, CONSULT SPACEFRAME BUILDINGS IMMEDIATELY.
4. THESE DRAWINGS INTENDED FOR USE WHEN PRINTED IN COLOUR. SOME INFORMATION MAY BE UNINTELLIGIBLE UNLESS PRINTED IN COLOUR.
5. IF IN DOUBT, ASK SPACEFRAME BUILDINGS.

7/03/2023 11:09:19 AM C:\Users\lowmassh\Documents\11466_NEW_CENTRAL_MODEL_HallamLowmass.rvt

EXISTING CABLE TRAY &
POWER SUPPLY CABLES

EXISTING PIPEWORK ON ROOF
(INDICATIVE ONLY)

EXISTING PIPEWORK ON ROOF
(INDICATIVE ONLY)

RIDGE

RIDGE

RIDGE

RIDGE

RL: 46.869
RL: 48.988
RL: 49.578
RL: 48.056
RL: 51.314
RL: 51.356
RL: 50.143
RL: 48.771
RL: 48.724
RL: 48.205
RL: 52.476
RL: 48.250
RL: 49.015
RL: 51.696
RL: 51.299
RL: 47.517

1.78°
1.07°
0.96°
0.95°
1.74°
1.91°
1.12°
0.95°
2.08°
2.38°
2.58°
2.61°
2.40°
5.13°
5.13°
2.59°
2.80°
2.78°
5.09°
3.01°
1.87°
4.62°
2.62°
4.22°
1.29°
1.51°
4.71°
0.92°
1.13°
5.00°
4.70°
3.50°
11.00°

EXISTING-ROOF PLAN
1 : 300 @ A1

SITE INFORMATION

LOT 1 on TP514081	**818,227 m²**
LOT 2 on TP514081	**130,859 m²**
FLOOR AREA	**13,284 m²**
Admin Office	270 m²
Amenities	496 m²
Boiler Building	113 m²
Boning Room	1,058 m²
Bulk Carton Store	315 m²
Chillers	1,401 m²
COO Office	73 m²
Freezers	3,731 m²
Kill Floor	1,306 m²
Laundry	32 m²
Marshalling Area	290 m²
Plant	547 m²
QA Office	58 m²
Rendering Building	1,128 m²
Stock Yards	2,176 m²
Warehouse	291 m²

EXISTING - ROOF PLAN

KILCOY GLOBAL FOODS

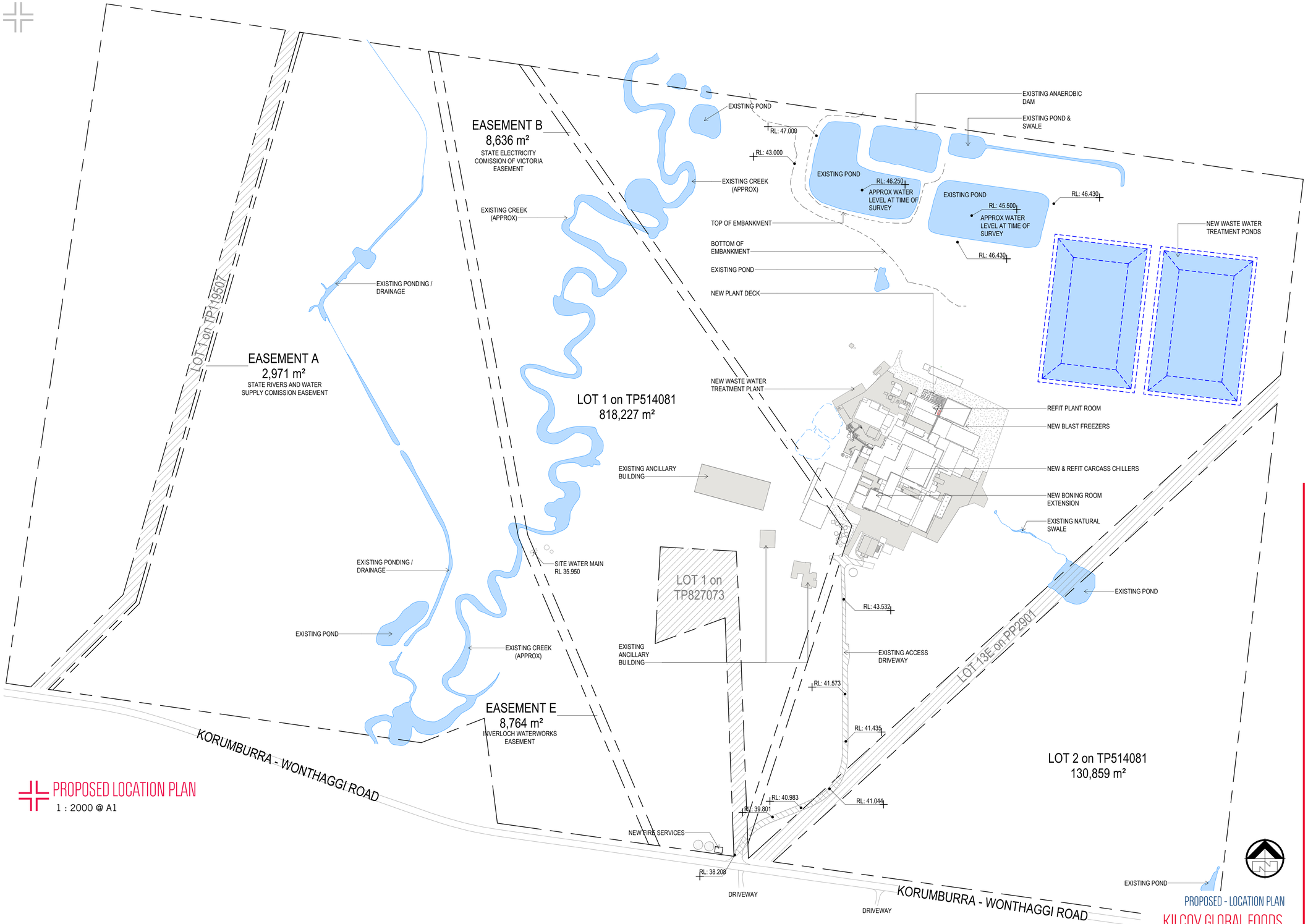
2140 KORUMBARRA-WONTHAGGI ROAD
LANCE CREEK VIC 3995

DWG N° 11466-12-9 by HAL
DATE 07/03/2023

spaceframe
DESIGN + CONSTRUCT SOLUTIONS

C:\Users\lowmassh\Documents\11466_NEW_CENTRAL_MODEL_HallamLowmass.rvt
7/03/2023 11:09:26 AM

DESIGN / DRAWING PACKAGE NOTES
1. **COPYRIGHT © SPACEFRAME BUILDINGS PTY LTD** THIS DOCUMENT IS CONFIDENTIAL AND REMAINS THE PROPERTY OF SPACEFRAME BUILDINGS PTY LTD. PERSONS RECEIVING IT MAY NOT REPRODUCE, COPY, OR DISCLOSE WITHOUT THE WRITTEN CONSENT OF SPACEFRAME BUILDINGS PTY LTD.
2. REFER TO ALL SPACEFRAME DRAWINGS FOR ADDITIONAL NOTES, LEGENDS, AND DETAILS.
3. ALL NOTES ARE 'UNLESS NOTED OTHERWISE', AND IF DISCREPANCIES ARE FOUND, CONSULT SPACEFRAME BUILDINGS IMMEDIATELY.
4. THESE DRAWINGS INTENDED FOR USE WHEN PRINTED IN COLOUR. SOME INFORMATION MAY BE UNINTELLIGIBLE UNLESS PRINTED IN COLOUR.
5. IF IN DOUBT, ASK SPACEFRAME BUILDINGS.



PROPOSED LOCATION PLAN

1 : 2000 @ A1

SITE INFORMATION

LOT 1 on TP514081	**818,227 m²**
LOT 2 on TP514081	**130,859 m²**
EXISTING	
Admin Building	270 m²
Boiler Building	113 m²
Boning Room	1,058 m²
Bulk Carton Store	315 m²
COO Office	73 m²
Freezers	2,944 m²
Kill Floor	1,306 m²
Laundry	32 m²
Marshalling Area	290 m²
Plant	164 m²
QA Office	58 m²
Stock Yards	2,176 m²
Warehouse	291 m²
	9,090 m²
PROPOSED	
Blast Freezers	550 m²
Boning Room Extn.	512 m²
Carcass Chillers 5-7	783 m²
Plant	335 m²
Plant Deck	416 m²
Refit Carcass Chillers 1-4	618 m²
	3,213 m²

PROPOSED - LOCATION PLAN

KILCOY GLOBAL FOODS

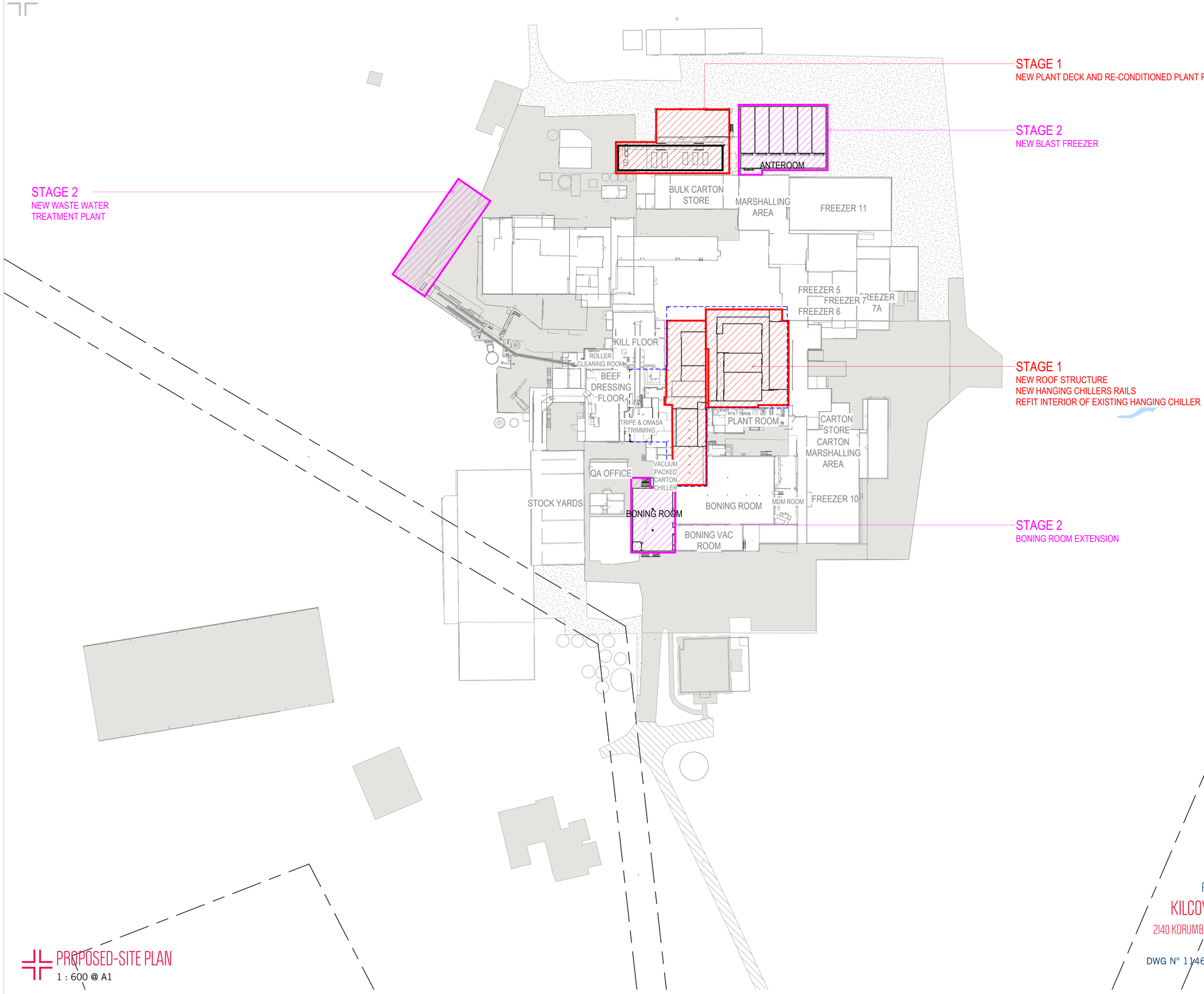
2140 KORUMBARRA-WONTHAGGI ROAD
LANCE CREEK VIC 3995

DWG N° 11466-M01_20-1 by HAL
DATE 07/03/2023

spaceframe
DESIGN + CONSTRUCT SOLUTIONS

C:\Users\lowmassh\Documents\11466_NEW_CENTRAL_MODEL_HallamLowmass.rvt
7/03/2023 3:30:22 PM

DESIGN / DRAWING PACKAGE NOTES
1. **COPYRIGHT © SPACEFRAME BUILDINGS PTY LTD** THIS DOCUMENT IS CONFIDENTIAL AND REMAINS THE PROPERTY OF SPACEFRAME BUILDINGS PTY LTD. PERSONS RECEIVING IT MAY NOT REPRODUCE, COPY, OR DISCLOSE WITHOUT THE WRITTEN CONSENT OF SPACEFRAME BUILDINGS PTY LTD.
2. REFER TO ALL SPACEFRAME DRAWINGS FOR ADDITIONAL NOTES, LEGENDS, AND DETAILS.
3. ALL NOTES ARE 'UNLESS NOTED OTHERWISE', AND IF DISCREPANCIES ARE FOUND, CONSULT SPACEFRAME BUILDINGS IMMEDIATELY.
4. THESE DRAWINGS INTENDED FOR USE WHEN PRINTED IN COLOUR. SOME INFORMATION MAY BE UNINTELLIGIBLE UNLESS PRINTED IN COLOUR.
5. IF IN DOUBT, ASK SPACEFRAME BUILDINGS.



STAGE LIST

STAGE 1

- NEW PLANT DECK
- RE-CONDITIONED PLANT ROOM
- NEW ROOF STRUCTURE
- NEW HANGING CHILLER RAILS
- REFIT INTERIOR OF HANGING CHILLERS

STAGE 2

- NEW BLAST FREEZER
- NEW WASTE WATER TREATMENT PLANT
- NEW BONING ROOM EXTENSION

SITE INFORMATION

LOT 1 on TP514081	**818,227 m²**
LOT 2 on TP514081	**130,859 m²**
EXISTING	
Admin Building	270 m²
Boiler Building	113 m²
Boning Room	1,058 m²
Bulk Carton Store	315 m²
COO Office	73 m²
Freezers	2,944 m²
Kill Floor	1,306 m²
Laundry	32 m²
Marshalling Area	290 m²
Plant	164 m²
QA Office	58 m²
Stock Yards	2,176 m²
Warehouse	291 m²
	9,090 m²
PROPOSED	
Blast Freezers	550 m²
Boning Room Extn.	512 m²
Carcass Chillers 5-7	783 m²
Plant	335 m²
Plant Deck	416 m²
Refit Carcass Chillers 1-4	618 m²
	3,213 m²

PROPOSED-SITE PLAN

1 : 600 @ A1

PROPOSED STAGING PLAN

KILCOY GLOBAL FOODS

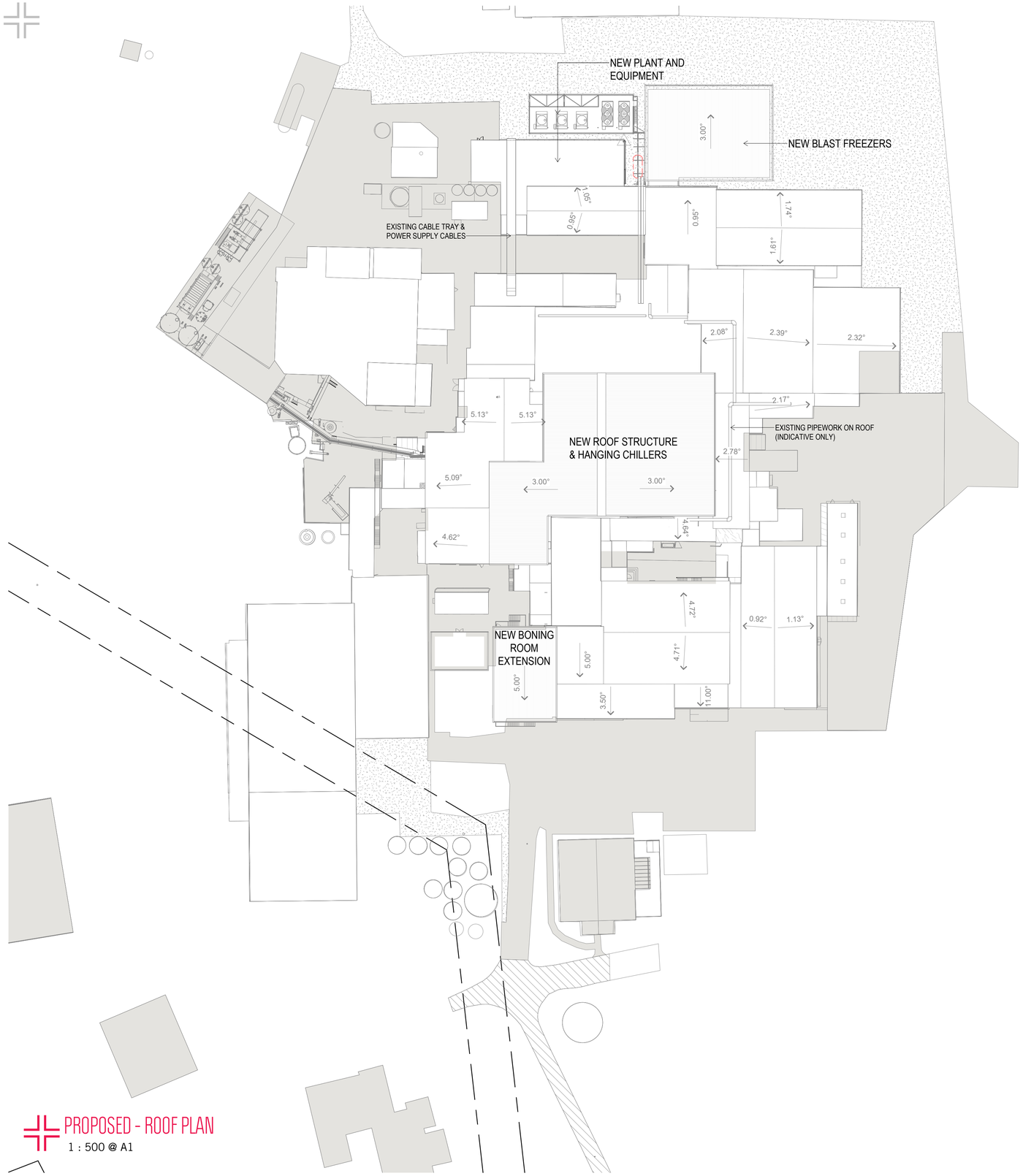
2140 KORUMBARRA-WONTHAGGI ROAD
LANCE CREEK VIC 3995

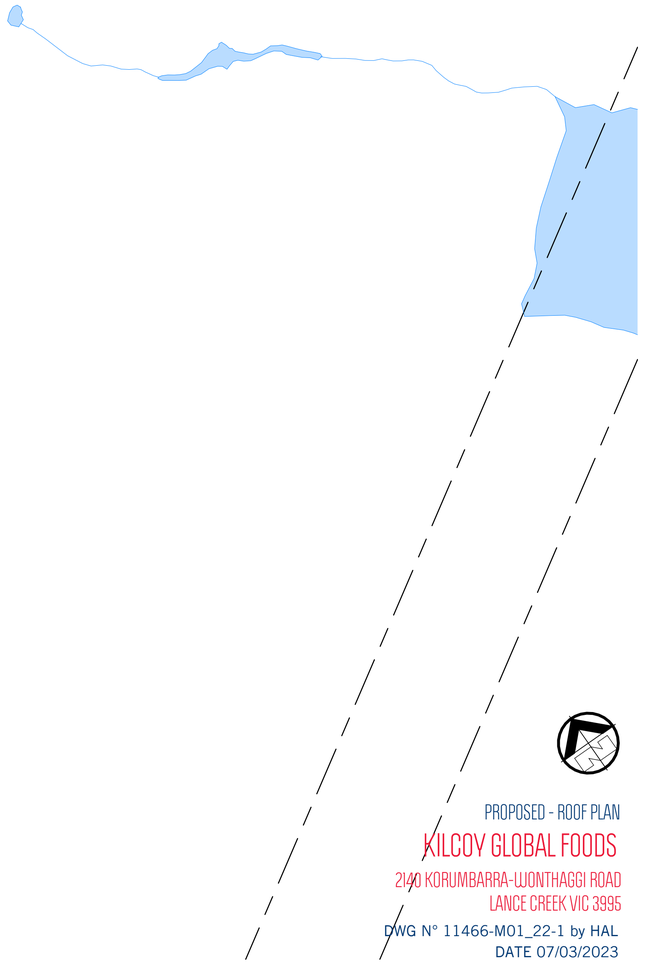
DWG N° 11466-M01_21-1 by HAL
DATE 07/03/2023

space frame
DESIGN + CONSTRUCT SOLUTIONS

DESIGN / DRAWING PACKAGE NOTES:
1. **COPYRIGHT © SPACEFRAME BUILDINGS PTY LTD** THIS DOCUMENT IS CONFIDENTIAL AND REMAINS THE PROPERTY OF SPACEFRAME BUILDINGS PTY LTD. PERSONS RECEIVING IT MAY NOT REPRODUCE, COPY, OR DISCLOSE WITHOUT THE WRITTEN CONSENT OF SPACEFRAME BUILDINGS PTY LTD.
2. REFER TO ALL SPACEFRAME DRAWINGS FOR ADDITIONAL NOTES, LEGENDS, AND DETAILS.
3. ALL NOTES ARE UNLESS NOTED OTHERWISE, AND IF DISCREPANCIES ARE FOUND, CONSULT SPACEFRAME BUILDINGS IMMEDIATELY.
4. THESE DRAWINGS INTENDED FOR USE WHEN PRINTED IN COLOUR. SOME INFORMATION MAY BE UNINTELLIGIBLE UNLESS PRINTED IN COLOUR.
5. IF IN DOUBT, ASK SPACEFRAME BUILDINGS.

C:\Users\lowmassh\Documents\11466_NEW_CENTRAL_MODEL_HallamLowmass.rvt
7/03/2023 3:44:52 PM





PROPOSED - ROOF PLAN
1 : 500 @ A1

PROPOSED - ROOF PLAN

KILCOY GLOBAL FOODS

2140 KORUMBARRA-JONTHAGGI ROAD
LANCE CREEK VIC 3995

DWG N° 11466-M01_22-1 by HAL
DATE 07/03/2023

SITE INFORMATION

LOT 1 on TP514081	**818,227 m²**
LOT 2 on TP514081	**130,859 m²**
EXISTING	
Admin Building	270 m²
Boiler Building	113 m²
Boning Room	1,058 m²
Bulk Carton Store	315 m²
COO Office	73 m²
Freezers	2,944 m²
Kill Floor	1,306 m²
Laundry	32 m²
Marshalling Area	290 m²
Plant	164 m²
QA Office	58 m²
Stock Yards	2,176 m²
Warehouse	291 m²
	9,090 m²
PROPOSED	
Blast Freezers	550 m²
Boning Room Extn.	512 m²
Carcass Chillers 5-7	783 m²
Plant	335 m²
Plant Deck	416 m²
Refit Carcass Chillers 1-4	618 m²
	3,213 m²

space frame
DESIGN + CONSTRUCT SOLUTIONS

DESIGN / DRAWING PACKAGE NOTES
1. **COPYRIGHT © SPACEFRAME BUILDINGS PTY LTD** THIS DOCUMENT IS CONFIDENTIAL AND REMAINS THE PROPERTY OF SPACEFRAME BUILDINGS PTY LTD. PERSONS RECEIVING IT MAY NOT REPRODUCE, COPY, OR DISCLOSE WITHOUT THE WRITTEN CONSENT OF SPACEFRAME BUILDINGS PTY LTD.
2. REFER TO ALL SPACEFRAME DRAWINGS FOR ADDITIONAL NOTES, LEGENDS, AND DETAILS.
3. ALL NOTES ARE 'UNLESS NOTED OTHERWISE', AND IF DISCREPANCIES ARE FOUND, CONSULT SPACEFRAME BUILDINGS IMMEDIATELY.
4. THESE DRAWINGS INTENDED FOR USE WHEN PRINTED IN COLOUR. SOME INFORMATION MAY BE UNINTELLIGIBLE UNLESS PRINTED IN COLOUR.
5. IF IN DOUBT, ASK SPACEFRAME BUILDINGS.

7/03/2023 3:30:36 PM C:\Users\lowmass\Documents\11466_NEW_CENTRAL_MODEL_HallamLowmass.rvt

Noise Impact Assessment - Exemption Application

Tabro Meat Abattoir 2140 Korumburra-Wonthaggi Road, Lance Creek

Kilcoy Global Foods

17 February 2023

→ The Power of Commitment



Project name		KGF Abattoir Development Licence and Planning Permit					
Document title		Noise Impact Assessment - Exemption Application | Tabro Meat Abattoir 2140 Korumburra-Wonthaggi Road, Lance Creek					
Project number		12571199					
File name		12597119-REP_0_KGF NoiseImpactAssessment_ExemptionApp.docx					
Status Code	**Revision**	**Author**	**Reviewer**		**Approved for issue**		
			Name	**Signature**	**Name**	**Signature**	**Date**
S3	A						02/02/2023
S4	0	V Lenchine	S Ritchie		T Young		17/02/2023
[Status code]							
[Status code]							
[Status code]							

GHD Pty Ltd ABN 39 008 488 373
180 Lonsdale Street, Level 9
Melbourne, Victoria 3000, Australia
T +61 3 8687 8000 | **F** +61 3 8732 7046 | **E** melmail@ghd.com | **ghd.com**

© GHD 2023
This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Contents

1. Introduction **1**
- 1.1 Purpose of this report 1
- 1.2 Scope of works 1
- 1.3 Limitations 1
- 1.4 Assumptions 2

2. Project description **3**
- 2.1 Overview 3
- 2.2 Land zoning 3
- 2.3 Sensitive receptors 5

3. Noise criteria **7**
- 3.1 Noise protocol 7
- 3.2 Environmental noise limits 7

4. Noise impact assessment **9**
- 4.1 Noise modelling methodology 9
- 4.2 Operational noise sources 9
- 4.3 Predicted noise levels 12
  - 4.3.1 Characteristic noise penalties 12

5. Mitigation measures **13**

6. Conclusion **14**

Table index

Table 1 Identified noise sensitive receivers 5
Table 2 Derived noise limits – rural area method 8
Table 3 Noise model parameters 9
Table 4 Site operational noise sources 11
Table 5 Predicted operational noise levels of proposed upgrade 12

Figure index

Figure 1 Planning zones for the area (referenced from VicPlan) 4
Figure 2 Nearest noise sensitive receivers 6
Figure 3 Location of noise sources 10

Glossary of terms

Term	Definition
Ambient Noise	The all-encompassing noise associated within a given environment. It is the composite of sounds from many sources, both near and far.
Background Noise Level	For a day, evening, or night period means the arithmetic average of the hourly L_{A90} levels that represents the background sounds in a noise sensitive area, in the absence of noise from any commercial, industrial or trade premises which appears to be intrusive at the point where the background level is measured.
dB	Unit of measurement for Sound Pressure Level known as a decibel
dB(A)	'A-weighted' decibel measurement, which represents the sound frequency response corresponding to the sensitivity of the human ear.
$L_{Aeq\ (Time)}$	Equivalent sound pressure level is the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring. This is considered to represent ambient noise.
$L_{A90\ (Time)}$	The A-weighted sound pressure level that is exceeded for 90 percent of the time over which a given sound is measured. This is considered to represent the background noise.
$L_{A10\ (Time)}$	The sound pressure level that is exceeded for 10 percent of the time specified.
Mitigation	Reduction in severity.
Sensitive receptor	A noise modelling term used to describe a map reference point where noise is predicted. A sensitive receptor would be a home, work place, church, school or other place where people spend time.
Sound Pressure Level (SPL)	The Sound Pressure Level is the change in air pressure above and below the average atmospheric pressure (amplitude) caused by a passing pressure wave. This is then converted to decibels and can be abbreviated as SPL or L_p.
Sound Power Level (PWL)	The Sound Power Level is defined as the average rate at which sound energy is radiated from a sound source. The Sound Power Level can be abbreviated as PWL or L_W.
Tonality	Noise with perceptible and definite pitch or tone.

1. Introduction

Development licences are issued by EPA Victoria for a range of development activities under the *Environment Protection Act 2017* ('the Act'). Licences and approvals are required for particular activities that have the potential for significant environmental impact. The EPA can also issue exemptions from the requirement to hold a development licence if the correct criteria can be met by the applicant, as set out in the Environment Protection Regulations 2021. Tabro Meat Pty Ltd currently holds an operating licence for the abattoir at 2140 Korumburra-Wonthaggi Road, Lance Creek. The Tabro site has not been operational for the last five years and since closure of the facility, the quality of existing equipment and building amenities has diminished.

Due to the current condition of the site, several upgrade works have been proposed to bring the facility to modern day standard and reduce risk to human health and the environment. A number of the proposed upgrades are to be completed as soon as possible, with the aim of commencing operations by April 2023. Given that these works will not have a significant impact on the environment and the facility will commence operations at a reduced capacity to what is outlined in the existing operating licence, Tabro Meat is applying for a development licence exemption for the following works:

– A new wastewater treatment system, including DAF, rotary screens, solid and fat removal
– Replacement of the existing coal fired boiler with a new 5MW gas fired boiler

To support the exemption application this preliminary noise impact assessment has been performed with consideration to these proposed works.

1.1 Purpose of this report

The purpose of this report is to assess noise emissions, discharges or impact to the environment from the proposed Wastewater Treatment Plant and Gas Fired Broiler, to form part of the exemption application.

The findings, conclusions and recommendations of this assessment should be read in conjunction with the limitations presented in section 1.3.

1.2 Scope of works

The scope of works for this assessment included the following:

– Review of information
– Conduct a preliminary noise impact assessment
– Reporting

1.3 Limitations

This report has been prepared by GHD for Kilcoy Global Foods and may only be used and relied on by Kilcoy Global Foods for the purpose agreed between GHD and Kilcoy Global Foods as set out in section 0 of this report.

GHD otherwise disclaims responsibility to any person other than Kilcoy Global Foods arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

GHD has prepared this report on the basis of information provided by Kilcoy Global Foods and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

1.4 Assumptions

The following assumptions were used in this report:

– All information provided by KGF is correct and representative of proposed operations at the site
– Information on equipment for water treatment plant is correct (Abattoir Wastewater Treatment DAF and Associated Equipment. Wastewater Treatment Proposal Document. Kilcoy Global Foods, proposal 20221207-CP-1716, 07 Dec. 2022)
– Noise modelling assumptions as per Section 4 of this report
– No noise character penalty is applicable to the site noise emissions

2. Project description

2.1 Overview

The site is located at 2140 Korumburra-Wonthaggi Rd, Lance Creek VIC 3995. The site is surrounded by noise sensitive receivers (residential), however they are located at substantial separation distance of greater than 500 metres from the site's anticipated noise sources. It is assumed that proposed boiler and water treatment operations have the potential to extend to evening and night time periods.

2.2 Land zoning

The site is located in a Farming Zone (FZ), the site is surrounded by noise sensitive uses that are also located in the same zone. Korumba-Wonthaggi Road is to the south of the site and lays within a Principal Road Network (TRZ2) zone.

The location of the site and the surrounding land uses is shown in Figure 1.

Planning zones



Property
- Properties
- Parcel
- All Zones

Planning Scheme Zones

Rural Zones
- FZ - Farming Zone

Public Land Zones
- PCRZ - Public Conservation and Resource Zone
- TRZ2 - Principal Road Network

Figure 1 Planning zones for the area (referenced from VicPlan)

NORTH

0 0.2 0.4

Kilometres

Map Projection: GDA 1994 VICGRID94
Print Date: 1/11/2023

Disclaimer
The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

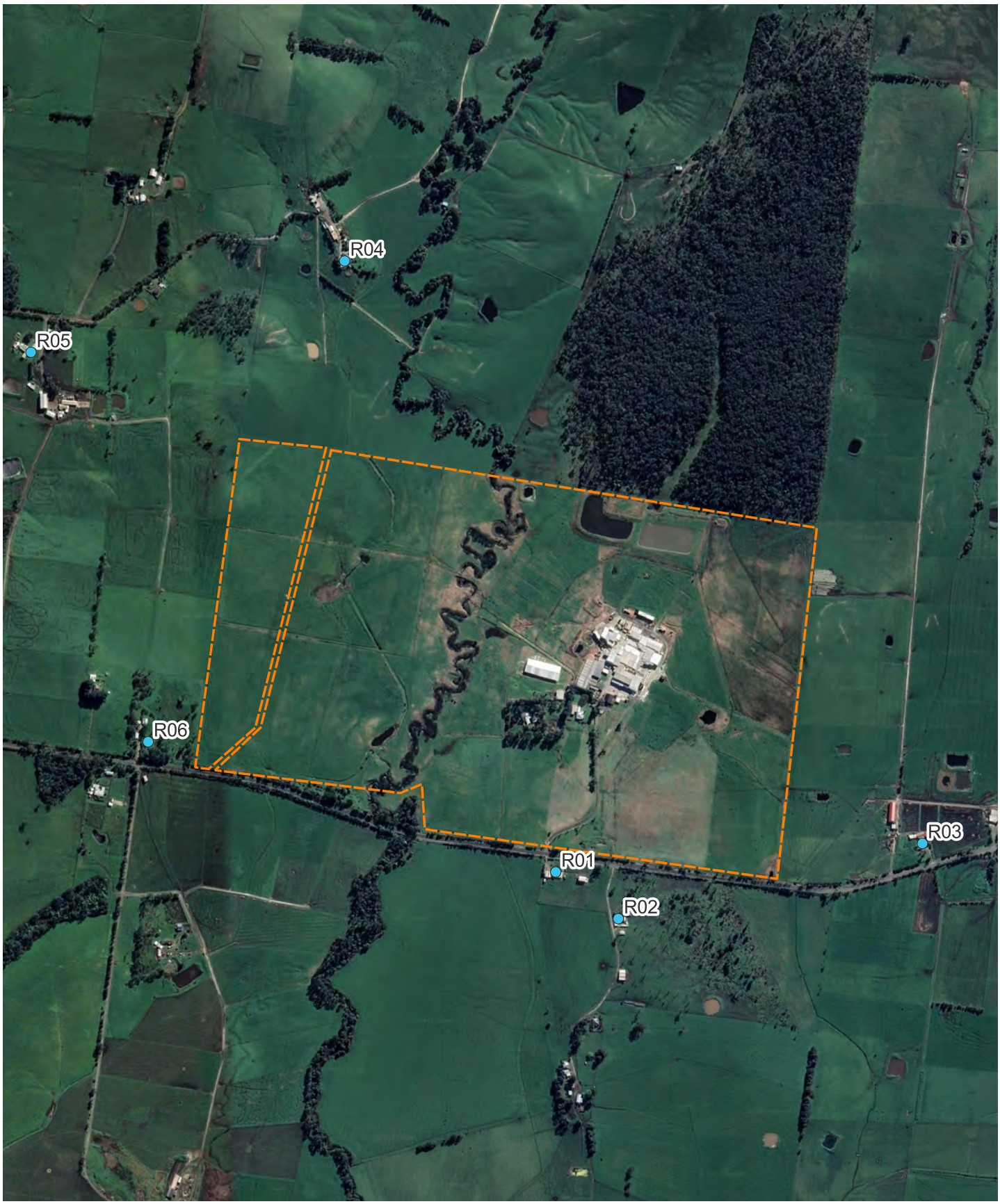
© The State of Victoria Department of Environment, Land, Water and Planning 2023

2.3 Sensitive receptors

A desktop review of aerial imagery and publicly available information has been undertaken aimed at identifying applicable nearest noise sensitive receivers to the site. The nearest identified noise sensitive receivers are summarised in Table 1, where approximate separation distances are given from the position of nearest anticipated site noise source. The assessed receiver locations do not include all sensitive receivers in the surrounding areas, but they are considered representative of likely worst case impacts for variety of directions around the site. Locations of the nearest noise sensitive receivers are shown in Figure 2.

Table 1 Identified noise sensitive receivers

Receiver	Address	Approx. distance from noise generating activity, m
R01	2139 Korumburra- Wonthaggi Rd	510
R02	2125A Korumburra- Wonthaggi Rd	620
R03	2050 Korumburra Wonthaggi Rd	800
R04	135 McDonald Rd	950
R05	80 McDonald Rd	1350
R06	2230 Korumburra Wonthaggi Rd	990



Legend

Site Boundaries ● Nearest Noise Sensitive Receivers

Paper Size ISO A4

0 0.1 0.2 km

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Kilcoy Global Foods

Noise Impact Assessment

Nearest Noise Sensitive Receivers

Project No. **12597119**
Revision No. **-**
Date. **19/01/2023**

FIGURE 2.0

Document Path: G:\31\12597119\GIS\Maps\Working\12597119-site_v1.qgz
Print Date: 19/01/2023

Data Source: Google Earth Imagery 2023.
Created By: cfairlie

©2023. While GHD has taken care to ensure the accuracy of this product, GHD and DATA CUSTODIAN(S), make no representations or warranties about its accuracy, completeness or suitability for any particular purpose. GHD and DATA CUSTODIAN(S) cannot accept liability of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred as a result of the product being inaccurate, incomplete or unsuitable in any way and for any reason.

3. Noise criteria

3.1 Noise protocol

Noise emissions from commercial, industrial and trade premises should meet the relevant Victorian environmental legislation in relation to noise. The applicable environmental noise legislation in Victoria is EPA Guideline 1826.4 *Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues* (Noise Protocol).

The Noise Protocol provisions have been incorporated into the Environment Protection Regulations 2021 (EP Regulations), which came into effect with the commencement of the amended Environment Protection Act 2017 on 1 July 2021. EPA Publication 1826.4 provides a protocol for the purpose of determining noise limits for new and existing commercial, industrial and trade premises and entertainment venues as defined by the EP Regulations. It sets the methodology for assessing the effective noise level to determine unreasonable noise under the EP Regulations.

The Noise Protocol prescribes the methodology to determine the maximum effective noise level allowed in a noise sensitive area from any commercial/industrial premises depending on the time period (day, evening, night), land use zoning and existing background noise levels.

During operations, the facility must demonstrate compliance with the General Environmental Duty in accordance with the Environment Protection Act 2017, which requires anyone engaging in any activity that may give rise to risks of harm to human health or the environment from pollution or waste to minimise those risks, so far as reasonably practicable, to ensure potential noise emissions from site activities will not impact the surrounding ambient environment.

There are two main methodologies to determine appropriate environmental noise criteria, which are dependent on the location of the noise sensitive receiver that is being assessed:

– Part I A.1 Noise limits - urban area method, or
– Part I A.2 Noise limits - rural area method

The urban area method must be utilised when the noise sensitive receiver is located within a major urban area and the rural area method is utilised when the noise sensitive receiver is located outside of a major urban area. The major urban area boundary is defined by the Victorian Government[1].

With consideration to the project location, all identified noise sensitive receivers are located outside of a major urban area boundary. As such, the environmental noise criteria is determined in accordance with the rural area method.

3.2 Environmental noise limits

All identified noise sensitive receivers and the future facility site fall outside of a Major Urban Area and, therefore, the applicable Noise Protocol noise limits should be established in accordance with Part I Section A-2 of the Noise Protocol.

The following steps are followed to determine the applicable noise limits for the site:

STEP 1: Determination of the Zone Level from Table B.1 of the Noise Protocol (EPA Victoria Guideline 1826.4), with FZ *Generation zone* and FZ *Receiving zone.*

STEP 2: Distance adjustment levels. The Noise Protocol stipulates that:

"if the noise generator and receiver are covered by the same contiguous zone, the distance adjustment is 0 dB;

if the noise generator and receiver are not located in land use zones with the same zone code subtract 1 dB for every 100 metres of receiver distance". 'Receiver distance' is the shortest distance from the receiver to the boundary of the zone in which the noise emitter is located.

[1] https://discover.data.vic.gov.au/dataset/major-urban-area-location-polygons-and-table

If a distance adjustment is required, the maximum subtraction is 9 dB.

STEP 3: Base noise level check. Check the distance adjusted levels against the Noise Protocol/EP Regulations baseline noise levels for each period during the day and adopt the greater of the two.

STEP 4: Background level check and adjustment. A background level assessment is required where the location of the noise sensitive receivers is considered to be situated within a 'background-relevant area'. 'Background-relevant area' means a noise sensitive area where background levels may be higher than usual for a rural area.

It should be noted that there is no distance adjustment if noise generating activity and sensitive receivers are located in the same contiguous planning zone. Road zone (Korumburra Wonthaggi Rd) separates the facility and nearest receivers to the south of the site, however it does not trigger distance adjustment of the criteria since Section 20 (d) of the Noise Protocol stipulates "if there is a zone for a road or a railway line that divides a noise-emitting zone, ignore the road or railway zone (that is, the zone should be treated as one contiguous zone for the receiver-distance adjustment)".

Background noise monitoring was not conducted for the nearest identified noise sensitive receivers as they are located sufficiently far away from any significant noise sources where background levels may be higher than usual including freeway or highway traffic or the sound of surf. As such, the nearest identified noise sensitive receivers are not considered to be within a background-relevant area.

The applicable zone levels are derived based on current planning zones and comparison with base noise limits in accordance with Environment Protection Regulations 2021 (applicable limits cannot be less than baseline limits). The project specific criteria have been established and are presented in Table 2.

Table 2 Derived noise limits – rural area method

Receiver ID	Zoning levels			Base noise levels			Derived Noise Limit, L_{Aeq} dB(A)		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
R01	46	41	36	45	37	32	46	41	36
R02	46	41	36	45	37	32	46	41	36
R03	46	41	36	45	37	32	46	41	36
R04	46	41	36	45	37	32	46	41	36
R05	46	41	36	45	37	32	46	41	36
R06	46	41	36	45	37	32	46	41	36

4. Noise impact assessment

4.1 Noise modelling methodology

For the purpose of preliminary assessment, simple point source propagation model was adopted. It does not take into account terrain, buildings and associated barrier effects. As such, these estimates can be taken as sufficiently conservative. More accurate estimates are expected to be obtained at the later stages of the project.

Preliminary noise assessment was undertaken using the ISO 9613-2 *Acoustics – Attenuation of sound during propagation outdoors* noise prediction algorithm. The ISO 9613-2 algorithm takes into account sound intensity losses due to distance attenuation, atmospheric absorption and ground absorption. It also takes into account the presence of a well-developed moderate ground based temperature inversion, such as those that commonly occur on clear, calm nights or light downwind conditions, which are favourable to sound propagation.

The general noise model parameters used within CadnaA are presented in Table 3.

Table 3 Noise model parameters

Variable	Parameter used
Calculation method	ISO 9613-2 prediction algorithm
Meteorology	Average temperature of 10˚C Average humidity of 70%
Ground absorption coefficient	0.5 for a mix of hard and soft ground (0 represents hard ground and 1 represents soft ground)
Receiver heights	1.5 m above ground level

4.2 Operational noise sources

At this early stage of the Project, noise source levels and indicative equipment specifications for the equipment as part of the proposed upgrade are not currently available. As such, the noise estimates have been based on the following:

– Major noise sources at the initial stage of the site operation will be:
  - Steam boiler
  - Wastewater treatment plant
– Sound power levels and spectrums for equipment as part of the upgrade estimated utilising methodologies in Engineering Noise Control software (ENC v.5.6, 2022), which are based on *Engineering Noise Control 4th Edition* by David A. Bies and Colin H. Hansen as presented in Table 4.
  - It is noted that these methodologies have been established in the 1980s and were based on equipment available at the time. It is expected that equipment will have been engineered to operate more efficiently and quieter since these methodologies have been established. As such, these estimations are considered conservative.
– All plant and equipment operating on a continuous basis simultaneously.
– Reported noise levels are the highest predicted noise levels at nearby sensitive receivers.

The equivalent sound power levels associated with boiler and water treatment plant were calculated based on data presented in Table 4 along with their assumed parameters required to estimate the sound power levels. Pumps of the waste water treatment plant with power 4 kW and below were not included in the table since their contribution to the total equivalent SPW is insignificant in comparison with more powerful components of the plant.

It is noted that the sound power levels for the identified existing pump room as established in Section 4.2 have also been included in the noise model to allow for a cumulative noise impact assessment from the site as a whole. Results of the modelling present cumulative noise impact from existing and future onsite noise sources.

Figure 3 presents the modelled noise sources.



Legend

▲ Wastewater Treatment Plant ▲ 5MW LPG Fired Boiler

Paper Size ISO A4

0 0.075 0.15 km

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Kilcoy Global Foods

Noise Impact Assessment

Location of Noise Sources

Project No. **12597119**
Revision No. **-**
Date. **19/01/2023**

FIGURE 3.0

Document Path: G:\31\12597119\GIS\Maps\Working\12597119-site_v1.qgz
Print Date: 19/01/2023

Data Source: Google Earth Imagery 2023.
Created By: cfairlie

©2023. While GHD has taken care to ensure the accuracy of this product, GHD and DATA CUSTODIAN(S), make no representations or warranties about its accuracy, completeness or suitability for any particular purpose. GHD and DATA CUSTODIAN(S) cannot accept liability of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred as a result of the product being inaccurate, incomplete or unsuitable in any way and for any reason.

Table 4 Site operational noise sources

Plant area	Equipment description	Operation	Parameter	Assumed value	Sound power level in dB(A) for Octave Band Centre Frequency (Hz)									Overall	
					31.5	63	125	250	500	1000	2000	4000	8000	dB	dB(A)
Boiler	Steam boiler	1-duty	Power	5 MW	64.4	77.6	86.7	92.2	94.6	94.8	93.0	89.8	84.7	109.8	100.5
WWTP	Green pit trash pump	1-duty, 1- standby	Speed	750–1950 rpm	39.4	53.6	64.7	74.2	79.6	85.8	84.0	79.8	71.7	91.8	89.3
			Power	7.5 kW											
	Red pit trash pump	2- duty	Speed	750–1950 rpm	39.4	53.6	64.7	74.2	79.6	85.8	84.0	79.8	71.7	91.8	89.3
			Power	7.5 kW											
	Screen pit trash pump	1-duty, 1- standby	Speed	750-1950 rpm	41.0	55.2	66.3	75.8	81.2	87.4	85.6	81.4	73.3	93.4	91.0
			Power	11 kW											
	DAF feed pump	2- duty	Speed	1450-2000 rpm	38.0	52.2	63.3	72.8	78.2	84.4	82.6	78.4	70.3	90.4	88.0
			Power	5.5 kW											
	DAF discharge pump	1-duty, 1- standby	Speed	1440–2000 rpm	44.0	58.2	69.3	78.8	84.2	90.4	88.6	84.4	76.3	96.4	94.0
			Power	22 kW											
	DAF recycle pump	1-duty	Speed	1600–1800 * rpm	41.0	55.2	66.3	75.8	81.2	87.4	85.6	81.4	73.3	93.4	91.0
			Power	11 kW											

* Assumed range of rpm since selection of the pumps is not yet finalised

4.3 Predicted noise levels

The predicted noise levels from the site including the existing pump room and the equipment as part of the proposed upgrade are presented in Table 5. The table also presents comparison to the established Noise Protocol noise limits at each of the nearest identified noise sensitive receivers.

Predictions have been made for likely worst-case noise emissions with all identified noise sources operating simultaneously over a 30-minute period. The predicted noise levels included in. Table 5 show that noise impact is predicted to comply with strictest night time criteria without additional noise mitigation measures.

Table 5 Predicted operational noise levels of proposed upgrade

Receiver	Predicted operational noise level, L_{eq} dB(A)	Noise Protocol noise limit, L_{eq} dB(A)			Compliance
		Day	Evening	Night	
R01	35	46	41	36	✓
R02	33	46	41	36	✓
R03	30	46	41	36	✓
R04	28	46	41	36	✓
R05	23	46	41	36	✓
R06	27	46	41	36	✓

Noise impact from the facility and neighbourhood industries have been predicted to meet noise limits at the nearest affected receivers during the day, evening and night periods.

4.3.1 Characteristic noise penalties

Penalties may be applied to noise from an industrial source which contains annoying characteristics in accordance with the procedures of Section 3.4 of the Noise Protocol. A 2 dB(A) penalty would apply when the tonal character of the noise is just detectable, and a 5 dB(A) penalty would apply when the tonal character of the noise is prominent.

As this assessment has been based on a number of assumptions, further information on selected equipment would be required to conduct an in-depth analysis for any tonality penalty.

It is noted that the existing operations are not audible at the nearest noise sensitive receivers. However, there is a risk that the actual selected equipment for the upgrade may exhibit tonal or other characteristics that may evoke adjustment under the Noise Protocol.

Should a characteristic noise penalty apply, predicted operational noise levels may exceed the relevant night noise limits at nearest sensitive receivers and additional noise mitigation measures may be required to secure compliance with relevant criteria. Absence of tones should be confirmed at the detailed design stage, noise mitigation measures may be considered in case the equipment exhibit a noise character. This is recommended to be included as a requirement for the contractor procuring the equipment to confirm.

5. Mitigation measures

Based on the results of the preliminary noise impact assessment, the operational noise is expected to comply with the relevant Noise Protocol noise limits at all noise sensitive receivers during the day, evening and night periods.

As the assessment has been based on a number of assumptions, further information on selected equipment would be required to conduct an in-depth analysis for any characteristic noise penalties at the nearest noise sensitive receivers.

Therefore, when designing the plant, the following design aspects should have careful consideration during the selection of plant and equipment:

– Minimising the generation of sound energy.
– Minimising the objectionable characteristics of the sound through selection or design equipment to minimise any tonal or other noise characteristics that may evoke penalty in accordance with the Noise Protocol.
– Sound power for final choice of equipment should not exceed the assumed sound power levels summarised in Table 4 and most likely be less than that since full operation of the site will involve additional noise sources,
– Reducing sound energy using noise mitigation such as sound absorption, acoustic enclosures, local noise barriers and the like.
– Increasing the acoustic performance of building/enclosure facades.
– Appropriate location of any louvres for building/enclosures.

It is noted that as the design progresses and further information on selected equipment becomes available, any specific design and operational noise mitigation measures required for the site can be specified. It is therefore recommended that another prediction of site noise emissions be undertaken during the detailed design stage of the Project to confirm that relevant noise limits are met and if any appropriate noise mitigation measures should be considered where relevant.

6. Conclusion

A noise impact assessment has been undertaken by GHD for the abattoir located at Korumburra-Wonthaggi Road, Lance Creek. The initial stage of the facility reactivation envisages a new 5 MW boiler and waste water treatment plant. Preliminary noise impact assessment was performed for a conservative operational scenario assuming simultaneous operation of all noise sources on the site.

Operational noise limits have been established in accordance with the provisions of the EPA Publication 1826.4 – Noise Protocol (EPA Victoria, 2021), with the most stringent night time noise limit of 36 dB(A) at the nearest identified noise sensitive receivers.

Due to the limited available information on equipment for the upgrade, a number of assumptions and sound power level estimations have been utilised to provide a conservative operational noise assessment.

The worst case predicted operational noise levels with the proposed upgrades with all identified major noise sources operating simultaneously were predicted to comply with the established relevant Noise Protocol noise limits at each identified noise sensitive receivers without additional noise mitigation measures.

No characteristic noise penalties were considered in the predicted noise levels. It is noted that the existing operations were not audible at the noise monitoring locations and any potential characteristic noise penalties would be due to the equipment as part of the facility reactivation.

As the assessment has been based on a number of assumptions, further information on selected equipment would be required to conduct an in-depth analysis for any tonality penalty. However, should the actual selected equipment display any noise characteristics and a penalty applies, predicted operational noise from the site is expected to exceed the relevant Noise Protocol night noise limits at nearest sensitive receivers.

It is therefore expected that another prediction of site noise emissions be undertaken during the detailed design stage of the Project to confirm compliance with applicable noise criteria or identify necessary noise mitigation measures to be considered in the design where relevant.

In-principle noise mitigation measures have been provided to assist with the management of noise from the operation of the site. As the design progresses and further information on selected equipment becomes available, a review of noise emissions and any specific noise mitigation measures for the site can be recommended.

Air Quality Assessment

Abattoir 2140 Korumburra-Wonthaggi Road, Lance Creek

Kilcoy Global Foods

17 February 2023

→ **The Power of Commitment**



Project name		KGF Abattoir Development Licence and Planning Permit					
Document title		Air Quality Assessment | Abattoir 2140 Korumburra-Wonthaggi Road, Lance Creek					
Project number		12597119					
File name		12597119-REP_KGF Air Quality Assessment.docx					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3	A						24/01/2023
S4	0	Y. Lim	M. Asimakis		T Young		17/02/2023
[Status code]							
[Status code]							
[Status code]							

GHD Pty Ltd | ABN 39 008 488 373

180 Lonsdale Street, Level 9

Melbourne, Victoria 3000, Australia

T +61 3 8687 8000 | **F** +61 3 8732 7046 | **E** melmail@ghd.com | **ghd.com**

© GHD 2023

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Contents

1. Introduction **1**
- 1.1 Purpose of this report 1
- 1.2 Scope of works 1
- 1.3 Limitations 1
- 1.4 Assumptions 2

2. Site overview **3**
- 2.1 Location and land use 3
- 2.2 Land zoning 3
- 2.3 Sensitive receptors 5

3. Proposed upgrade **7**
- 3.1 Gas Fired Boiler (GFB) 7
- 3.2 Wastewater Treatment Plant (WWTP) 8

4. Relevant legislation and guidelines **11**
- 4.1 Separation distances - EPA Publication 1949 11
- 4.2 EPA Publication 1961 Guideline for assessing and minimising air pollution in Victoria (2022) 13
- 4.3 EPA Publication 1883: Guidance for Assessing Odour 14

5. Level 1 Air Quality Assessment - EPA Publication 1961 **15**
- 5.1 Description of GFB emissions 15
- 5.2 Receiving environment 16
  - 5.2.1 Size and vulnerability of nearby population 16
  - 5.2.2 Meteorology 16
  - 5.2.3 Background air quality 18
  - 5.2.4 Topography 18
- 5.3 Proposed risk controls and checks 18
  - 5.3.1 Risk controls 18
  - 5.3.2 Checks 19
- 5.4 Rationale 19

6. Level 2 Odour Assessment - EPA Publication 1883 **20**
  - 6.1.1 Odour Source Score (OSS) 20
  - 6.1.2 Odour Pathway Score (OPS) 20
  - 6.1.3 Odour Receiving Environment Score (ORS) 21
  - 6.1.4 Overall level 2 score 23

7. Conclusion **24**

Table index

Table 1	Identified sensitive receptors within 1 km of the site	5
Table 2	Proposed GFB Technical Specification	7
Table 3	Boiler Flue Stack Specifications	8
Table 4	Composition of wastewater stream	8
Table 5	Frequency of wind directions	18
Table 6	Derivation of scores for odour exposure pathway effectiveness	21
Table 7	Derivation of scores receiving environment sensitivity	22

Figure index

Figure 1	Site Location	4
Figure 2	Sensitive Receptors	6
Figure 3	GFB Reference Image	7
Figure 4	Proposed WWTP P&ID	9
Figure 5	Site Layout	10
Figure 6	Default Separation Distance	12
Figure 7	Annual wind rose 2017 to 2021 – Pound Creek (Station 85099)	17

1. Introduction

Kilcoy Global Foods ("KGF") has purchased the abattoir site at 2140 Wonthaggi-Korumburra Road, Lance Creek, with the intention of upgrading the site and obtaining the relevant regulatory approvals to commence operations as soon as practicable. The site was formerly owned and operated by Tabro Meats, who ceased operations at the site in 2017. The planning permit to operate as an abattoir has since lapsed and will need to be reobtained. Tabro Meats was granted an operating licence from EPA Victoria (OL000002907).

Additionally, KGF intends to carry out new building works and upgrade existing facilities. GHD understands that the proposed works will take place over a period of three to five years.

As such, KGF will be required to obtain a Development Licence from the Environmental Protection Agency (EPA) and a Planning Permit from the local council (Bass Coast Shire Council) prior to commencing construction works.

A detailed technical study is required as part of the submission of an exemption application to EPA to allow for KGF to operate at reduced capacity preparation. The focus of the exemption application to EPA pertains to proposed upgrades to the Wastewater Treatment Plant and Gas Fired Boiler.

1.1 Purpose of this report

The purpose of this report is to assess the air quality impact to the environment from the proposed upgraded Wastewater Treatment Plant (WWTP) and Gas Fired Boiler (GFB), to form part of the exemption application.

The findings, conclusions and recommendations of this assessment should be read in conjunction with the limitations presented in section 1.3.

1.2 Scope of works

The scope of works for this assessment included the following:

– Review of information
– Qualitative air quality risk assessment
  - EPA separation distance assessment
  - Level 1 air quality assessment for the GFB in accordance with EPA Publication 1961
  - Level 2 odour assessment for the WWTP in accordance with EPA Publication 1883
– Reporting

1.3 Limitations

This report has been prepared by GHD for Kilcoy Global Foods and may only be used and relied on by Kilcoy Global Foods for the purpose agreed between GHD and Kilcoy Global Foods as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Kilcoy Global Foods arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

1.4 Assumptions

The following assumptions were used in this report:

– This assessment excludes impacts from all other air quality sources beyond the GFB and WWTP from the abattoir
– All information provided by KGF is correct and representative of proposed operations at the site.
– The local meteorological data from Bureau of Meteorology (BoM) operated AWS at Pound Creek is representative of the site.

2. Site overview

2.1 Location and land use

The site is located at 2140 Korumburra-Wonthaggi Rd, Lance Creek, Victoria as shown in Figure 1. Adjacent to the east, north and west of the facility are properties zoned as Farming Zone. Adjacent to the south of the property is the Korumburra-Wonthaggi Road.

2.2 Land zoning

The site is located in a Farming Zone, which is land designated for “the use of land for agriculture, encouraging the retention of productive agricultural land, ensure non-agricultural uses including dwellings do not adversely affect the use of land agriculture, encouraging the retention of employment and population to support rural communities, encouraging use and development of land based on comprehensive and sustainable land management practises and infrastructure provision and provide for the use and development of land for the specific purposes identified in a schedule to this zone”[1]. Surrounding areas are also classified under public conservation and resource zone. There are no nearby industries or parks found within a 1 km radius.

[1] Department of Environment, Land, Water and Planning (DELWP), 2019. Victorian Planning Provisions



Legend

Site Boundary

Paper Size ISO A4

0 0.00025 0.0005 km

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Kilcoy Global Foods

Air Quality Assessment

Site Location

Project No. **12597119**
Revision No. **-**
Date. **24/01/2023**

FIGURE 1

Document Path: \\ghdnetghd\AU\Melbourne\Projects\31\12597119\GIS\Maps\Working\12597119-site_v1.qgz
Print Date: 24/01/2023

Data Source: Google Earth Imagery 2023.
Created By: ylim

©2023. While GHD has taken care to ensure the accuracy of this product, GHD and DATA CUSTODIAN(S), make no representations or warranties about its accuracy, completeness or suitability for any particular purpose. GHD and DATA CUSTODIAN(S) cannot accept liability of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred as a result of the product being inaccurate, incomplete or unsuitable in any way and for any reason.

2.3 Sensitive receptors

The definition of a sensitive receptor or sensitive land use is defined by EPA[2] (2022, p. 46) as:

'Any land use that requires a focus on protecting human health and wellbeing, local amenity and aesthetic enjoyment." Examples* of such sensitive land uses include but not limited to, '*dwellings, hospitals, aged care facilities, education centres, childcare centres, places of worship, corrective institutions'.*

It is further defined in EPA Publication 1961 (2022, p. 8) as:[3]

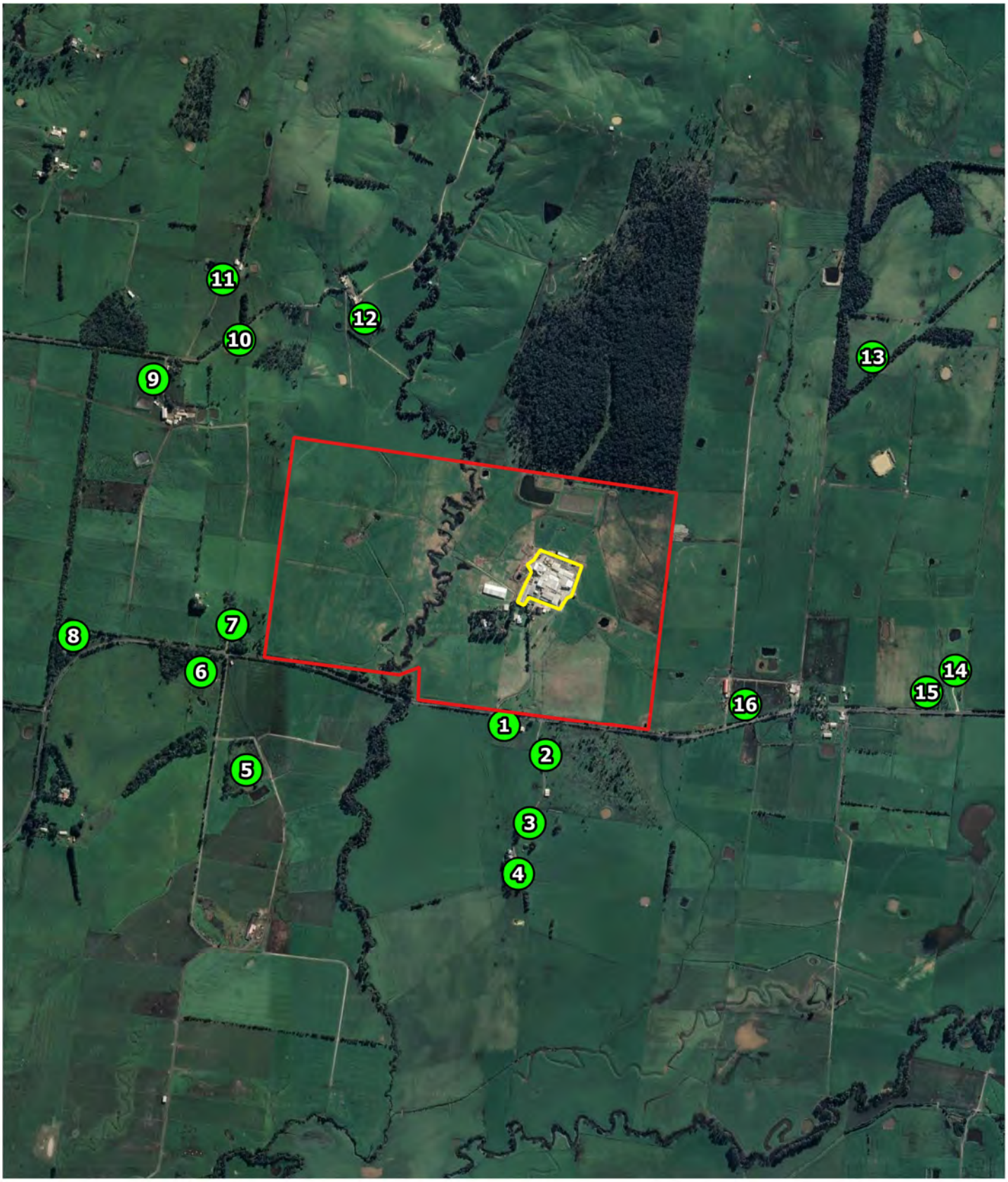
"A land use where is it plausible for humans to be exposed over durations greater than 24 hours, such as residential premises, education and childcare facilities, nursing homes, retirement villages, hospitals."

A number of sensitive land uses were identified within 1.5 km of the site and summarised in Table 1 and shown in Figure 2. GHD notes that two residential dwellings located on site appears to be vacant during a site visit undertaken on 19 January 2023.

Table 1 Identified sensitive receptors within 1 km of the site

Direction	Receptor no.	Address	Distance to site (m)
S	1	2139 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	404
S	2	2125A KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	486
S	3	2125B KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	716
S	4	2125C KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	888
SW	5	2235 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	1054
WSW	6	2237 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	1070
WSW	7	2230 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	944
WSW	8	2280 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	1470
NW	9	84 MCDONALD ROAD LANCE CREEK 3995	1378
NW	10	110 MCDONALD ROAD LANCE CREEK 3995	1206
NW	11	85 MCDONALD ROAD GLEN ALVIE 3979	1378
NW	12	135 MCDONALD ROAD LANCE CREEK 3995	959
NE	13	59 PERRETT ROAD LANCE CREEK 3995	1183
ESE	14	1984 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	1281
ESE	15	1996 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	1213
ESE	16	2050 KORUMBURRA-WONTHAGGI ROAD LANCE CREEK 3995	676

[2] EPA Publication 1949, Separation distance guideline (2022)
[3] EPA Publication 1961. Guideline For Assessing and Minimising Air Pollution (2022)



Legend

- Site Boundary
- Envelope of sources
- Sensitive Receptors

Paper Size ISO A4

0 0.00025 0.0005 km

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Kilcoy Global Foods

Air Quality Assessment

Sensitve Receptors

Project No. 12597119
Revision No. -
Date. 24/01/2023

FIGURE 2

Document Path: \\ghdnetghd\AU\Melbourne\Projects\31\12597119\GIS\Maps\Working\12597119-site_v1.qgz
Print Date: 24/01/2023

Data Source: Google Earth Imagery 2023.
Created By: ylim

©2023. While GHD has taken care to ensure the accuracy of this product, GHD and DATA CUSTODIAN(S), make no representations or warranties about its accuracy, completeness or suitability for any particular purpose. GHD and DATA CUSTODIAN(S) cannot accept liability of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred as a result of the product being inaccurate, incomplete or unsuitable in any way and for any reason.

3. Proposed upgrade

3.1 Gas Fired Boiler (GFB)

Previously the facility had two boilers, one LPG gas boiler (2MW) and 1 briquette boiler (3MW). Assessment of the boilers (undertaken in 2018) revealed:

– Gas trains were not compliant to standards
– Steam productions was under capacity for future resources
– The LPG gas boiler had some tubes blanked off which reduced capacity
– Good quality fuel supply for the briquette boiler had been difficult to source

As such a new 5MW LPG boiler has been proposed as part of upgrades to the site to replace the two previous boilers. The new GFB is approximated to produce 8000 kgs/hr of steam at 100°C feed water temperature. A reference image of a typical GFB is provided in Figure 3 with the technical specifications summarised in Table 2. Table 3 outlines specifications for the boiler flue stack. Location of the proposed GFB is displayed in Figure 5.



Figure 3 GFB Reference Image

Table 2 Proposed GFB Technical Specification

Specification	Unit
Supplier	O'Brian Energy Engineered
Model	OBYTRICE 8000
Boiler Type	Fire Tube
Burner	ELCO EK EVO
Fuel	Diesel/LPG
Boiler Output	5MW
Steam Output	8000 kg/hr
Boiler Design Pressure	12 bar
Dimensions	6210mm x 3380mm x 3595mm (L x W x H)
Dry Weight	21000 kg

Table 3 Boiler Flue Stack Specifications

Specification	Unit
No. boiler flue stacks	1
Height	8 m
Diameter	600 mm
Volumetric discharge when plant first starts operation	TBC
Volumetric discharge when plant is at maximum capacity	TBC
Concentration of key air species in flue gas (mg/m^3)	TBC

3.2 Wastewater Treatment Plant (WWTP)

A brief description supported by a treatment process diagram (refer to Figure 4) and a figure showing the location of various process equipment (Figure 5) has been provided below to assist with understanding the parts of the WWTP which have the potential to generate odour. The WWTP is sized for up to 100kL/hr flow rate when the plant is operating at 600 heads per day.

The WWTP proposed consists of 5 mm plate built Dissolved Air Flotation (DAF) system, drum screens two buffer tanks, chemical dosing, two wastewater streams (Green/Red), sludge tanks. All components are considered standard and of best practice at many abattoirs and food processing operations in Australia.

The red stream consists of wastewater from slaughtering, chiller, boning room, render and red offal areas. The green stream consists of wastewater from the stockyard and green offal areas. It is understood that solids from the red stream will be sent to a third-party rendering operation with the waste fat and bone material from the slaughter floor, offal room and boning room. Blood will also be collected and sent to a third-party rendering operation.

It is also understood that the DAF float, bottom dwelling sand and bone dust will be dewatered to be sent to a composter with the paunch grass.

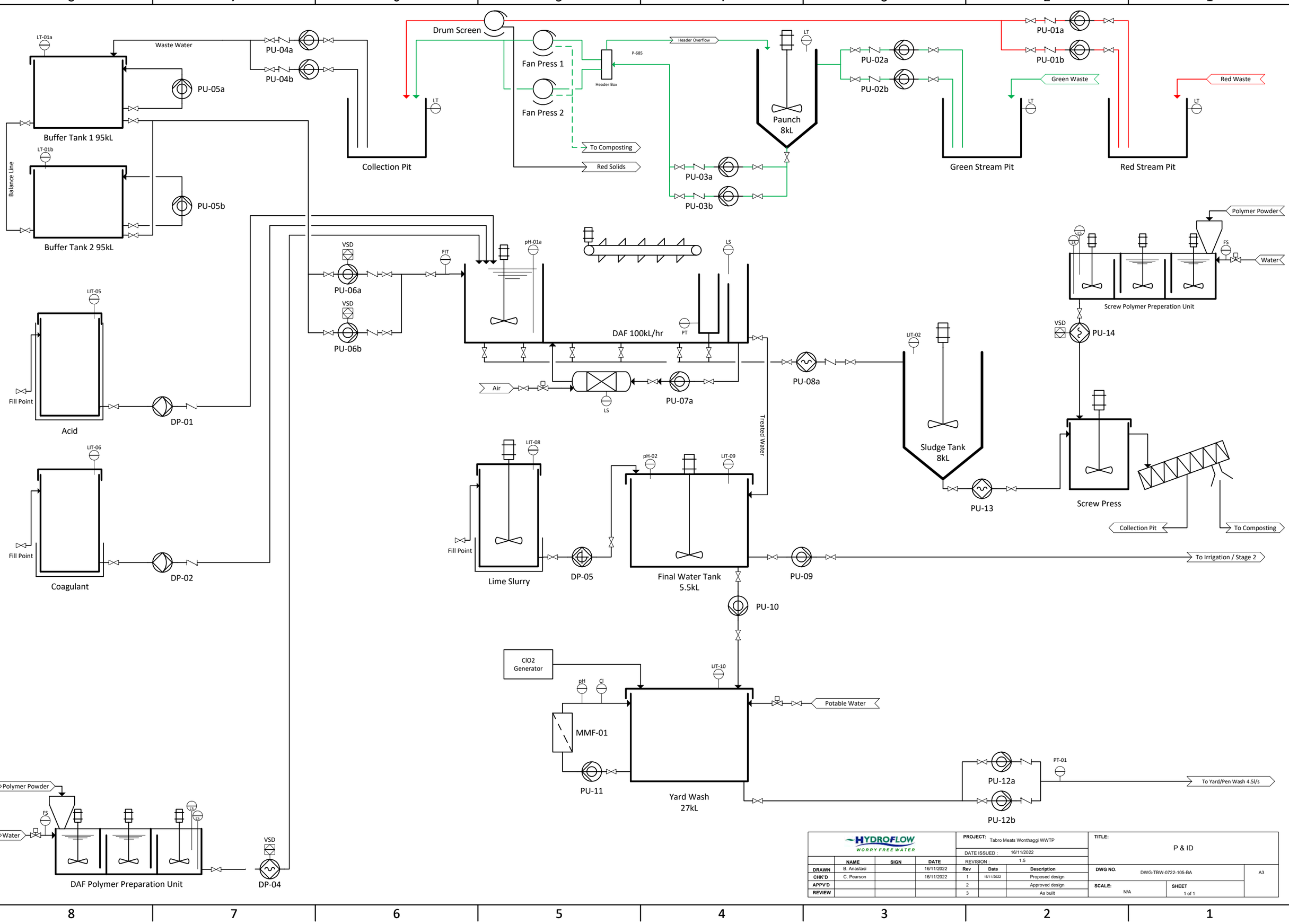
GHD notes that, BOD, TSS and O&G are likely to be reduced more than 90% through a chemically dosed DAF system as part of best practices for food processing industries. Some best practices proposed for the WWTP include:

– Buffer tanks to be fitted with mixing pumps prior to the DAF. This allows for both temperature and flow rates to equilibrate for optimum DAF performance.
– Tertiary aerobic treatment to reduce Total Nitrogen.
– Chemical dosing using alum or ferric chloride to reduce Total Phosphorus.
– Running and standby pumps for wastewater transfer.
– PLC control of the system, instrumentation for monitoring of flow parameters.

Composition of wastewater entering the WWTP has been provided by KGF and summarised in Table 4.

Table 4 Composition of wastewater stream

	Red Stream	Green Stream	Typical Treatment System Discharge Limits
BOD (mg/L)	4000	1300	300
COD (mg/L)	6800	3000	< 3xBOD
TSS (mg/L)	3000	1440	1000
G&O (mg/L)	2400	31	-
TDS (mg/L)	-	-	4000
NH_3 (mg/L)	-	-	50
TKN (mg/L)	-	-	100
TP (mg/L)	-	-	20
Temp (°C)	55	Ambient	<38



HYDROFLOW WORRY FREE WATER				PROJECT: Tabro Meats Wonthaggi WWTP			TITLE: P & ID	
				DATE ISSUED : 16/11/2022				
	NAME	SIGN	DATE	REVISION : 1.5				
DRAWN	B. Anastasi		16/11/2022	Rev	Date	Description	DWG NO. DWG-TBW-0722-105-BA	A3
CHK'D	C. Pearson		16/11/2022	1	16/11/2022	Proposed design		
APPV'D				2		Approved design	SCALE: N/A	SHEET 1 of 1
REVIEW				3		As built		



Legend

- Site Boundary
- Envelope of sources
- Boilder
- Water Treatment Plant

Paper Size ISO A4

0 0.00025 0.0005 km

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 55

N

GHD

Kilcoy Global Foods

Air Quality Assessment

Site Layout

Project No. **12597119**
Revision No. **-**
Date. **24/01/2023**

FIGURE 5

Document Path: \\ghdnetghd\AU\Melbourne\Projects\31\12597119\GIS\Maps\Working\12597119-site_v1.qgz
Print Date: 24/01/2023

Data Source: Google Earth Imagery 2023.
Created By: ylim

©2023. While GHD has taken care to ensure the accuracy of this product, GHD and DATA CUSTODIAN(S), make no representations or warranties about its accuracy, completeness or suitability for any particular purpose. GHD and DATA CUSTODIAN(S) cannot accept liability of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred as a result of the product being inaccurate, incomplete or unsuitable in any way and for any reason.

4. Relevant legislation and guidelines

4.1 Separation distances - EPA Publication 1949

The EPA Victoria *Separation Distance Guideline*, 2022, Publication 1949 provides advice on recommended separation distances between industrial land uses that emit odour or dust, and sensitive land uses.

The purposes of the guideline can be summarised as:

– Provide clear direction on which land uses require separation
– Inform and support strategic land use planning decisions and the consideration of licences, permits, registrations and applications for new or expanding developments
– Prevent new sensitive land uses from impacting on existing industrial land uses
– Prevent new or expanded industrial land uses from impacting on existing sensitive land uses
– Identify compatible land uses that can be established within a separation distance area

In the case of an existing industrial use, EPA recommends separation distances should be considered when preparing a planning scheme, planning scheme amendment, or planning permit application. Therefore, this is the relevant guideline for this assessment.

The buffers are to be scribed as per Publication 1949 Method 2 (Rural method). This method is applicable when the nearest sensitive land use is not in an urban area/township with a property boundary of at least 4,000 m^2. The separation distance is to be measured from the activity boundary of the industry to the activity boundary of the sensitive land use, i.e. the activity boundary of the industry is a convex polygon containing the activities of the industry.

The EPA separation distance guideline includes a default separation distance for 'Abattoir – no rendering', which consist of sites 'with outdoor or exposed animal holding and loading areas' (EPA Victoria, 2022, p. 26). The two separations distances have been listed based on head/day of animals expected on site as follows:

– >12 head/day: 500 m separation distance
– >6,000 head/day: 1000 m separation distance

GHD understands KGF will operate at 600 head/day capacity. Using interpolation, a default separation distance of 550m has been calculated. GHD has plotted the default separation distance from the envelope of sources in Figure 6.

From the figure it can be seen that the separation distance extends to residential receptors 1 and 2 to the south of the site.

4.3 EPA Publication 1883: Guidance for Assessing Odour

Publication 1883 supports industries to achieve the General Environmental Duty under the EPA Act, specifically in relation to odour. The publication provides a framework for three levels of risk assessment, according to the odour impact potential of an industry or site. The publication seeks to provide:

– *Guidance on methods for assessing the impacts of odour pollution on human health and wellbeing, including site specific risk assessment methods, and*
– *Recommendations on what to include in assessment reports.*

An assessment may include the following:

– Source/Pathway/Receptor approach
– Relative dispersion modelling.
– Comparison with similar facilities/ best practice.
– Odour surveillance
– Review of complaint history

Publication 1949 recommends for odour risk assessments to be undertaken in accordance with Publication 1883 in the case of a constraint. The Source/Pathway/Receptor Assessment of the WWTP has been undertaken in Section 6 based on Publication 1883.

5. Level 1 Air Quality Assessment - EPA Publication 1961

Section 5 of EPA Publication 1961 *Guideline for assessing and minimising air pollution in Victoria* states that when determining the level of assessment required for an assessment, the first step involves identifying if the emissions meet the guiding principles outlined in Section 5.2 of the guideline.

The guiding principles include:

1. Routine activities that have controls that are known to be effective (such as concrete batching plants).
2. Mass emission rates that are so low they can be considered negligible. As a general rule, emission sources that are not required to report to the NPI can often be considered to pose a negligible inherent risk.
3. Fugitive emissions that are difficult to assess accurately, including earth-moving activities and construction activities.

If it is determined that a Level 1 assessment is sufficient to inform the implementation of appropriate risk controls, then the following must be provided:

– A description of the emission sources in line with identifying hazards in Publication 1961 (provided in section 5.1)
– A description of the receiving environment in line with identifying hazards in Publication 1961 (provided in section 5.2)
– All the proposed risk controls and checks in line with implementing controls and checking controls in Publication 1961 (provided in section 5.3)
– A concise rationale justifying proposed approach against the three principles listed above (provided in section 5.4)

5.1 Description of GFB emissions

The potential emissions from the GFB are as follows:

– Carbon monoxide
– Oxides of nitrogen
– Particulate matter ≤10.0 µm
– Particulate matter ≤2.5 µm
– Sulfur dioxide
– Total volatile organic compounds

It is indicated by the GFB supplier for the proposed unit to be designed with the lowest emissions possible. Any maintenance, management and sampling will be part of a service agreement with the supplier if required. As outlined in section 4.2 of Publication 1961, the proposed GFB falls within the category of “routine activities that have controls that are known to be effective” which includes natural gas boilers <20 MW. These activities are listed to commonly demonstrate adequate management through the implementation of specific risk controls. Therefore, a Level 1 assessment is sufficient to assess risk.

5.2 Receiving environment

5.2.1 Size and vulnerability of nearby population

An overview of the land uses and sensitive receptors surrounding the site is provided section 2.3. EPA Publication 1961 states that in addition to the identification of sensitive land uses, it is useful to consider additional descriptive data to characterise the potentially exposed population, such as the size and vulnerability of the exposed population.

The population density of an area is reported by the Australian Bureau of Statistics (ABS) by Mesh Blocks. The relevant sensitive receptors surrounding the site (Bass Coast) have a population density of 39 persons per km² as reported in the 2016 Census. This is slightly more than surrounding area of South Gippsland which has a population density of 9 persons per km². However, the population density in Bass Coast is slightly less than surrounding area Cardinia which has a population density of 76 persons per km² respectively. Overall, the population density surrounding the site is considered low.

The vulnerability of a community is classified through the Socio-Economic Indexes for Areas (SEIFA) by the ABS, which ranks areas according to their relative socio-economic advantages and disadvantages. Of particular interest is the index of relative socio-economic disadvantage (IRSD) for the statistical area level 1 (SA1). EPA Publication 1961 states that if the IRSD score is in quintile one (most disadvantaged), then the population is likely to be particularly vulnerable to pollution. The SEIFA index for the area surrounding the site has a quintile rating of five (i.e. least disadvantaged) and therefore the population surrounding the site is not expected to be particularly vulnerable to pollution.

5.2.2 Meteorology

An analysis of the wind climate at representative locations near the site gives some indication of the potential for off-site exposure to emissions. In particular, the typical distribution of wind speed and wind direction can highlight key issues with regards to dispersion from source to receptor impacts.

The BoM operated automatic weather station (AWS) at Pound Creek (15 km southeast of the site) is considered representative of the area due to the weather station's similar exposure to prevailing winds. High quality meteorological data (five years (2017 – 2021)) at hourly intervals from Pound Creek was used for this assessment.

5.2.2.1 Long term pattern in wind

The annual wind rose is shown in Figure 7.

– The average measured wind speed 3.76 m/s
– Wind speeds greater than 6 m/s occur 19% of the time
– Light winds less than 2 m/s occur 26% of the time
– The predominant wind direction is from the north which consists of the highest frequency of winds between 2 – 4 m/s
– Southerly winds were less frequent than other wind directions, occurring approximately less than 3% of the period. In contrast, northerly winds occur approximately 11% of the period
– High wind speeds (>6 m/s) are most dominant from the southwest quadrant
– Low wind speeds (less than 2 m/s) predominantly occur from the north and north-northeast directions.

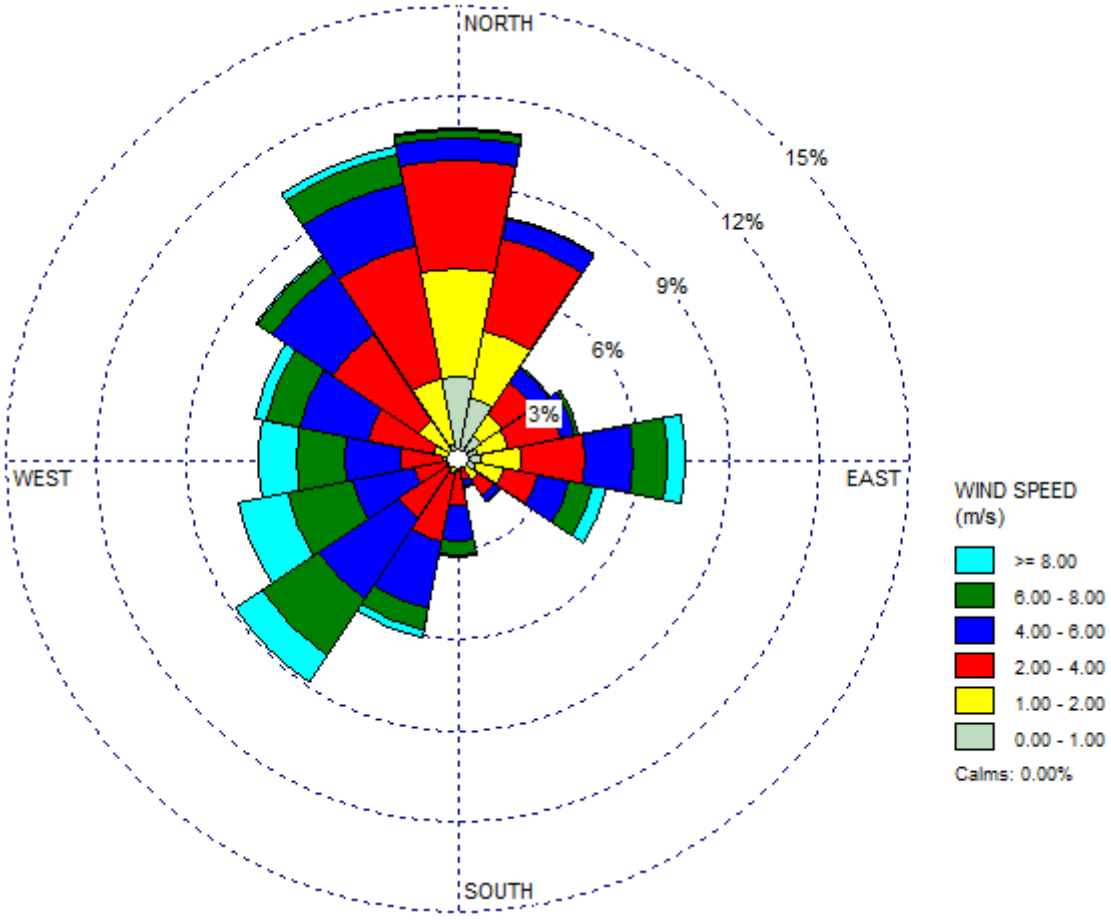


Figure 7 Annual wind rose 2017 to 2021 – Pound Creek (Station 85099)

5.2.2.2 Application to site

GHD has analysed the percentage of time (frequency) the identified receptors (refer to section 2.3) would be located downwind of the site, based on the local meteorology, discussed above, throughout the year.

The frequency of each direction resulting in a sensitive receptor being downwind of the site is provided in Table 5. The frequencies presented in Table 5 can be used to infer the likelihood of these receptors being downwind of the site in the unlikely event that off-site emissions were to occur.

From Table 5, it can be seen that the highest percentage of winds of interest occurs from the north, placing the residential receptors downwind of the site for 11% of the year.

Residential receptor 14 located northeast of the site has the next highest percentage of winds of interest occurring for 9% from the southwest. All remaining receptors are downwind of the site less than 6% of the time. Based on the wind frequencies, GHD considers there to be a low likelihood that the identified receptors would be downwind of the site in the unlikely event that off-site emissions were to occur.

Table 5 Frequency of wind directions

Sensitive receptor	Direction(s) from the site	Frequency of time downwind (%)
Residential 1	S	11%
Residential 2	S	11%
Residential 3	S	11%
Residential 4	S	11%
Residential 5	S	11%
Residential 6	SW	3%
Residential 7	WSW	4%
Residential 8	WSW	4%
Residential 9	WSW	4%
Residential 10	NW	>1%
Residential 11	NW	>1%
Residential 12	NW	>1%
Residential 13	NW	>1%
Residential 14	NE	9%
Residential 15	ESE	6%
Residential 16	ESE	6%
Residential 17	ESE	6%

5.2.3 Background air quality

A review of industries surrounding the project site with an EPA Victoria licence and of the National Pollutant Inventory (NPI) was undertaken to gain an understanding of the potential background emissions from nearby industries. It was found that no other industries with an EPA Victoria licence or report to the NPI within 1 km of the proposed site.

5.2.4 Topography

The topography of the area surrounding the site is largely flat and would likely not be conducive to trapping ground-based emissions due to terrain heights.

5.3 Proposed risk controls and checks

5.3.1 Risk controls

Under the GED, KGF has a responsibility to prioritise the elimination of risks from air emissions. When this is not possible, emitters must implement appropriate controls to minimise or mitigate risks to human health or the environment. When risk cannot be eliminated, risk control options should be prioritised, based on the risk and waste management hierarchies.

Risk minimisation under the GED involves following the risk management hierarchy, which in order of effectiveness is as follows:

1. Eliminate the hazard
2. Substitute the hazard / engineering controls
3. Administrative controls

This hierarchy has been applied to the facility as follows:

Eliminate the hazard

Elimination of the hazard (emissions from the GFB will be generated as a result of operations) is not feasible, so the application of engineering controls will be the most practical way to minimise risk.

Substitute the hazard / engineering controls

– Emissions vented to atmosphere to achieve good dispersion via 8 m heigh stack
– Best practice features, (i.e. VSD on fan, O_2 trimming, integrated TSD controls, feedwater pumps on VSD) for the GFB should be considered on installation.

Administrative controls

– Maintenance and management of GFB should be discussed with supplier prior to beginning of operation
– Routine inspection/sampling to be discussed with supplier prior to beginning of operation

5.3.2 Checks

EPA Publication 1961 states that the development of risk controls is not intended to be the end of the risk management process. Ongoing performance evaluation through monitoring and continual improvement is required under the GED to ensure ongoing compliance.

One of the most useful ways to evaluate ongoing performance with respect to risk management of air quality is through monitoring. It is recommended that KGF keep an environmental register (to log any incidents, complaints, should they occur). Ongoing sampling of discharge flue once operational should be considered and also logged in an environmental register to demonstrate low impact of the boiler.

5.4 Rationale

Based on the above, it was determined that:

– The emissions associated with operation of the GFB are classified under the first guiding principle, namely: routine activities that have controls that are known to be effective
– The receiving environment has:
  - The SEIFA index has a quintile rating of five (i.e. least vulnerable) and therefore the population surrounding the site is not expected to be particularly vulnerable to pollution.
  - A low likelihood that the identified receptors would be downwind of the site in the unlikely event that off-site emissions were to occur.
  - No industries surrounding the site have an EPA Victoria licence and no industries report to the NPI are located within 1 km of the site.
  - Topography that is largely flat and would likely not be conducive to trapping ground-based emissions due to terrain heights.
– Engineering and administrative controls will be implemented by KGF
– Checks to enable continual improvement will be conducted by KGF

Therefore, the air quality risk associated with the GFB and receiving environment is considered to be negligible and managed in accordance with the GED.

6. Level 2 Odour Assessment - EPA Publication 1883

GHD has referred to the Guidance for Assessing Odour (EPA Publication 1883) to assess the risk of odour from the WWTP. EPA Publication 1883 offers three levels of risk assessment to examine the potential for odour impacts to occur from industries. The guideline directs the user to proceed directly to a level 2 or 3 assessment unless the following conditions for a level 1 assessment are met:

– The assessment is for a proposed new industry, **and**
  - The odour source has a low odour potential
  - Surrounding industries have a medium or higher odour potential

The WWTP has a high odour potential (Appendix A and B of EPA Publication 1883) this assessment proceeds to level 2.

The level 2 assessment uses a source/pathway/receiving environment tool to assess the level of risk from the odour source. This is a qualitative method, however the outcome of the assessment is quantified with the use of scores determined by the EPA. The scoring of the assessment outcome is based on three attributes:

– Hazard potential of the source (odour source score – OSS)
– Exposure pathway between the source and sensitive locations (odour pathway score – OPS)
– Sensitivity of the receiving environment (odour receiving environment score – ORS)

GHD has applied the steps and tools in the level 2 assessment as outlined below:

6.1.1 Odour Source Score (OSS)

To determine the odour potential of the source, the guideline refers the reviewer to Appendix A and Appendix B: The WWTP does not fall under a specific category in Appendix A for activity type. Instead, GHD has categorised the WWTP odour potential using Appendix B. The WWTP is grouped as “sewage/septic” which has an unsafe character. As such as high odour potential has been applied to the site.

A weighting is then applied for the effectiveness of odour controls at the site. The main odour source in a WWTP plant stems from anaerobic activity. Based on information provided by KGF, daily processing of the wastewater should not allow anaerobic activity to commence. Given that it is an enclosed mechanical system with best practice technology (DAF plant) a high weighting has been selected.

Applying the ratings from Table 1 and 2, the OSS score is 3 - 1 = 2.

6.1.2 Odour Pathway Score (OPS)

To determine the effectiveness of the transmission of odour from the potential source to receiving environment, the following categories are considered:

– Distance of receiving environment to the source
– Meteorology of receiving environment to the source
– Terrain and built form within the area
– Hours of operation of odour generating activities

Table 6 presents the selected categories to assess the OPS.

Table 6 Derivation of scores for odour exposure pathway effectiveness

Score	Category			
	Distance	**Meteorology**	**Terrain & Built From**	**Hours of Operation**
1	**Long distance:** Receiving environment is kilometres or hundreds of metres from source.	**Favourable:** Winds rarely (<10%) blow from source away from receiving environment.	**Favourable:** Highly built-up intervening zone with multiple non-sensitive uses that have no emissions of their own. Densely forested. Source is downslope of receiving environment (or located in a valley or quarry hole).	**Low frequency:** Emissions are rare and only occur if there is a significant upset or multiple lines of failure. Emissions related to specific infrequent planned (monthly or annual) activities).
2	**Medium distance:** Receiving environment is tens to hundreds of metres from source. Separation distance has not been met or only just met at the threshold distances.	**Neutral:** Even distribution of winds (10-20%) from source to receiving environment.	**Neutral:** Moderate vegetation, source is on same altitude as receiving environment. Intervening land use zone contains other non odorous industry or smaller businesses.	**Moderate frequency:** Emissions or operations not continuous, typically confined to business hours during the day. Reasonably regular in frequency (once per day to several times per week).
3	**Short distance:** Receiving environment is adjacent to the source/ site. Distance well below (less than half) separation distance).	**Unfavourable** High frequency (>20%) of winds from source to receiving environment.	**Unfavourable:** Flat cleared land. Source is upslope of receiving environment, with isolated dwellings or structures in pathway. Receiving environment abuts source.	**High frequency:** Emissions continuously occurring 24/7 or for long periods at a time (eg. Landfills, oil refineries, sewage treatment plants etc.

– Distance: A score of two was determined as the default 550 m separation distance (discussed in Section 5) to the sensitive receptors has not been met (400 m to the closest sensitive receptor).
– Meteorology: The incidence of light winds (<2 m/s) conducive to odour impacts from the WWTP to sensitive receptors identified in Section 2.3 is less than 7% therefore a score of one has been allocated.
– Terrain & built form: A score of two was determined for the rural area with both the site and sensitive receptors having approximately the same elevation.
– Hours of operation: It is assumed for the site to have periodic deliveries of animals. The proposed WWTP will therefore operate based on periodic site operations throughout the week rather than 24/7. Therefore, a score of two was determined for hours of operations.

Applying rating from Table 6, the OPS score is 2 (taken as the maximum score of all the categories)

6.1.3 Odour Receiving Environment Score (ORS)

The sensitivity of the receiving environment has two aspects: the overall land use in the receiving environment and the compliance history, social or historical context experienced by people in the receiving environment (where a +1 is added to the odour receiving environment score (ORS).

Land use is based on the land use terms and nesting diagrams in the Victoria Planning Provisions (VPP) land use terms. These are grouped into three categories, which are fully detailed in Table 7 below. Assessment is based on the most sensitive land-use within (or proposed to be within) the separation distance or two kilometres, whichever is closest.

Table 7 Derivation of scores receiving environment sensitivity

Score	Sensitivity	VPP Land use term or nesting group (number in bold)	Existing Uses
1	Low	– 73.04-3 Agriculture group (sub-group animal production) – 73.04-2 Agriculture group – 73.04-10 Recreational boat facility group – 73.04-15 Warehouse group – 73.04-5 Industry group – 73.04-7 Earth and energy resources group – 73.04-13 Transport terminal group – 73.04-14 Utility installation group – 73.04-16 Renewable energy group – Car park – Saleyard – Tramway – Natural systems – Freeway service centre – Service station	– Industrial use or equivalent rural use (in the case of agricultural odours). No population nearby or uses are transient (e.g., state parks etc.). – Exposure to odours can easily be avoided.
2	Medium	– Research centre – Winery – Cemetery – Crematorium – Emergency services facility – 73.04-8 Office group – 73.04-6 Leisure and recreation group – 73.04-9 Place of assembly group – 73.04-11 Retail premises group – 73.04-12 Retail Premises group (sub-group of shop) – Brothel – Art and craft centre – 73.04-4 Education centre group	– Business areas: exposure can typically be controlled by mitigation at the receptor (incorporated health ventilation and air conditioning systems etc.). – Receptors that are single dwelling or isolated rural dwellings receptor is business/commercial. – Enjoyment of the outdoors: recreational activities, playing sport, populations can move on or plan around exposure.
3	High	– Rural living zones – Hotels/motels – Hospital – Prison – Mixed use zones with residential apartments (at ground or 2 to 3 storeys). – 73.04-1 Accommodation group – Residential areas	– Built up area, towns, many dwellings with backyards and outdoor living areas. – Rural residential, schools, childcare or apartments. – Permanent populations where avoiding exposure is not possible.

In this case, the most sensitive land-use would be that of the nearby rural residents located 400 m south of the site. GHD is unaware of any compliance, social or historical issues experienced by people in the receiving environment, therefore the additional (+1) is not required to be added.

Applying rating from Table 7, the ORS score is 2

6.1.4 Overall level 2 score

A level 2 source pathway receiving environment score (SPR) is achieved by adding the ORS, OSS and OPS together. Therefore, based on the above:

– OSS = 2
– OPS = 2
– ORS = 2

The overall level 2 assessment score = 6, meaning activity is low risk. In accordance with the Level 2 assessment, a low risk does not require further assessment.

7. Conclusion

GHD has been engaged by KGF to undertake an air quality assessment in relation to the proposed upgrades to the WWTP and GFB for the abattoir site at 2140 Wonthaggi-Korumburra Road, Lance Creek, VIC 3995.

The findings of each component of the air and odour assessment are summarised below.

Default EPA separation distance

A default separation distance was plotted in accordance with the EPA buffer guideline to a radius of 550 m from the site boundary. The default separation distance encompasses two residential receptors to the south of the site.

EPA Publication 1961 Level 1 Assessment - GBF

– The emissions associated with operation of the GFB were classified under the first guiding principle in EPA Publication 1961, namely: Routine activities that have controls that are known to be effective.
– It was determined that a Level 1 assessment in accordance with EPA Publication 1961 was sufficient to inform the implementation of appropriate risk controls. The following was therefore provided:
    - A description of the emission sources in line with identifying hazards in Publication 1961 (provided in section 5.1)
    - A description of the receiving environment in line with identifying hazards in Publication 1961 (provided in section 5.2)
    - All the proposed risk controls and checks in line with implementing controls and checking controls in Publication 1961 (provided in section 5.3)
    - A concise rationale justifying proposed approach against the three principles listed above (provided in section 5.4)
– Based on the Level 1 assessment outcomes, the air quality risk associated with the GBF and receiving environment is considered to be negligible and managed in accordance with the GED.

EPA Publication 1883 Level 2 Assessment - WWTP

A level 2 assessment (source/pathway/receiving environment tool) undertaken by GHD in accordance with EPA Publication 1883 assesses the level of odour risk from the WWTP to be low. A low risk is categorised as not requiring further assessment.

Conclusion

Based on the above findings, GHD concludes that the proposed upgrades pose a low risk to air quality impact.

Planning Permit Application

Lance Creek Abattoir – 2140 Korumburra-Wonthaggi Road, Lance Creek

Statutory Planning Department, Bass Coast Shire Council

17 March 2023

→ The Power of Commitment



180 Lonsdale Street, Level 9
Melbourne, Victoria 3000
Australia
www.ghd.com

Our ref: 12597119

17 March 2023

Statutory Planning Department, Bass Coast Shire Council
76 McBride Avenue
Wonthaggi, VIC 3995

Planning Permit Application

Dear Sir/Madam

This Planning Permit Application has been prepared by GHD Pty Ltd (GHD) on behalf of Kilcoy Global Foods Australia (KGF) for the use, buildings and works for expansion and upgrade works for the existing abattoir, as well as a reduction in the car parking requirement.

This application details the proposal and provides an assessment against the relevant provisions of the Bass Coast Planning Scheme (the 'planning scheme'). Details of the planning permit application are set out in the report below and includes the following documentation:

– *Appendix A* – Traffic Impact Assessment
– *Appendix B* – Air & Odour Assessment
– *Appendix C* – Noise Assessment
– *Appendix D* – Waste Management Assessment
– *Appendix E* – Cultural Heritage Assessment
– *Appendix F* – EPA Licence Exemption Application
– *Attachment 1* – Planning Permit Application Form
– *Attachment 2* – Certificate of Title
– *Attachment 3* – Construction Plans

Regards

Kelly Nelson
Senior Planner

03 8687 8064
kelly.nelson@ghd.com

Project name		KGF Abattoir Development Licence and Planning Permit					
Document title		Planning Permit Application | Lance Creek Abattoir – 2140 Korumburra-Wonthaggi Road, Lance Creek					
Project number		12597119					
File name		12597119_REP_KGF Abattoir Planning Permit Application.docx					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	01	Kelly Nelson Hannah Cameron	Kelly Nelson		Tom Young		17.03.23
[Status code]							
[Status code]							
[Status code]							
[Status code]							

GHD Pty Ltd | ABN 39 008 488 373

180 Lonsdale Street, Level 9

Melbourne, Victoria 3000, Australia

T +61 3 8687 8000 | **F** +61 3 8732 7046 | **E** melmail@ghd.com | **ghd.com**

© GHD 2023

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Contents

1. Introduction **1**
1.1 Site context 2
1.2 Land tenure 2
2. Project details **6**
2.1 Overview 6
2.1.1 Buildings and works 6
2.1.2 Abattoir operations 7
2.1.3 Gas Fired Boiler 7
2.1.4 Wastewater treatment plant (WWTP) 8
2.2 Environmental considerations 8
2.2.1 Traffic Impact Assessment 8
2.2.2 Air & Odour 9
2.2.3 Noise 9
2.2.4 Water Management 10
2.2.5 Waste Management 10
2.2.6 Land Capability Assessment (LCA) 11
2.2.7 Flora & Fauna 12
2.2.8 Cultural Heritage 12
2.2.9 Stakeholder Consultation 14
3. Planning scheme provisions **15**
3.1 Meaning of terms 15
3.1.1 Land use definition 15
3.2 Planning Policy Framework (PPF) 15
3.3 Local Planning Policy Framework (LPPF) 19
3.4 Planning controls 19
3.4.1 Zoning 19
3.4.2 Overlays 20
3.5 Particular provisions 25
3.5.1 Clause 52.06 – Car parking 25
3.5.2 Clause 52.29 – Land adjacent to the Principal Road Network 25
3.5.3 Clause 52.34 – Bicycle facilities 26
3.5.4 Clause 53.10 – Uses with potential adverse impacts 26
4. Planning assessment **27**
4.1 Clause 35.07 – Farming Zone 27
4.2 Clause 52.06 – Car Parking 28
5. Conclusion **30**

Table index

Table 1	Application overview	1
Table 2	Land tenure details	2
Table 3	Description of proposed works	6
Table 4	Gas fired boiler model specifications	7
Table 5	Clause 52.06 car parking requirements	28

Figure index

Figure 1	Project locality context	4
Figure 2	Site context	5
Figure 3	Aboriginal Cultural Heritage Sensitivity	13
Figure 4	Zoning	22
Figure 5	Planning overlays	23
Figure 6	Bushfire risk	24

Appendices

Appendix A	Traffic Impact Assessment
Appendix B	Air & Odour Assessment
Appendix C	Noise Assessment
Appendix D	Cultural Heritage Assessment
Appendix E	EPA Licence Exemption Application

Attachments

Attachment 1	Planning permit application form
Attachment 2	Certificates of Title
Attachment 3	Construction Plans

1. Introduction

This application for a planning permit has been prepared by GHD Pty Ltd (GHD) on behalf of Kilcoy Global Foods (KGF) for the use and development of the land for an abattoir. This application seeks approval for the following permit triggers:

– The use of land as an abattoir and buildings and works pursuant to clause 35.07 – Farming Zone
– A reduction in car parking pursuant to clause 52.06 – Car parking

The site was formerly owned by the Foresun Group and operated by Tabro Meats. Bass Coast Shire (Council) previously issued a planning permit for abattoir operations at the property however this permit has since expired due to the operation of the use approved under the Permit ceasing. As such, this application seeks permission to allow the use to re-commence on the subject site.

Infrastructure within the facility and associated equipment requires upgrading and replacement to recommence operations as an abattoir. KGF and Tabro Meat intend to undertake these works in a manner that presents low to no risk to the environment and human health. Following discussions with the Environmental Protection Agency (EPA), the overall upgrades will be undertaken in a staged approach across a period of three to five years. This application includes necessary maintenance and upgrade works to bring the facility back to an operational condition which will be undertaken over a period of 12 months. These works are described in detail in Section 2.1.

KGF will also be required to obtain an exemption from Development Licence from the Environmental Protection Agency (EPA) for these initial works. This application has been submitted.

This application details the proposed land use and buildings and works and provides an assessment against the relevant provisions of the Bass Coast Planning Scheme (the 'planning scheme').

Table 1 Application overview

Application Details	
Address of Land	2140 Korumburra-Wonthaggi Road, Lance Creek, VIC 3995
Title Details	– 1\TP514081 – 2\TP514081 – 1\TP119507 – 1\TP827073 – 13E\PP2901 Refer to Table 2 for land tenure details.
Approximate Site Coordinates	-38.547317, 145.673300
Zone	Clause 35.07 – Farming Zone (FZ)
Overlays	Clause 44.04 – Land Subject to Inundation Overlay (LSIO) (part of the site) Clause 44.06 – Bushfire Management Overlay (BMO) (part of the site)
Particular Provisions	Clause 52.06 – Car parking Clause 52.29 – Land adjacent to the Principal Road Network Clause 52.34 – Bicycle facilities Clause 53.10 – Uses with potential adverse impacts
Planning Permit Triggers	Clause 35.07 – Farming Zone (FZ) for land use and buildings and works. Clause 52.06 – Car parking to reduce the provision of the numerical car parking requirement Clause 52.29 – Land adjacent to the Principal Road Network for altering access to a road in the TRZ2 Clause 52.34 – Bicycle facilities for the provision of bicycle and end-of-trip facilities
Applicant	Kilcoy Global Foods Australia Level 2/ 36 Innovation Pkwy Birtinya QLD 4575

Application Details	
Contact Person	GHD on behalf of Kilcoy Global Foods Australia Kelly Nelson, Senior Planner Level 9, 180 Lonsdale Street Melbourne VIC 3000 E: **Kelly.Nelson@ghd.com** T: +61 3 86878064

1.1 Site context

The subject site is located within Lance Creek in Victoria at 2140 Korumburra-Wonthaggi Road. The property is located approximately 9 kilometres (km) northeast of Wonthaggi and 18 km southwest of Korumburra. The property covers an approximate area of 96 hectares (ha). The existing abattoir and associated facilities are situated centrally within the eastern side of the property, with a net floor area of 12,303 square metres (m^2). It is directly accessible from a private road running north from Korumburra-Wonthaggi Road.

The project site has a predominantly flat topography and is surrounded by large expanses of rural farming and agricultural land, comprising paddocks, cropped grasslands and some protected conservation land. The property itself comprises three paddocks designated for crop irrigation with two water storage ponds north of the abattoir plant. The vegetation is sparse, with some small patches of scrubs and lowland forest. Some scattered trees and vegetation frame the southern area of the abattoir facility and along the roadway. Lance Creek runs south through the centre of the property with scattered trees and vegetation lining the waterway.

Historical title search records provided by KGF indicate the site was historically crown land before being owned and occupied by farmers and graziers from 1910. Tabro Meat purchased the site in 1990. Historical aerial photography indicates there have been no significant changes to the site since 2010.

Figure 1 shows the wider site context and Figure 2 depicts the project area.

1.2 Land tenure

The proposed works will be undertaken at the property address 2140 Korumburra-Wonthaggi Road, Lance Creek. This property includes five land parcels, although the proposed works will be undertaken in two land parcels identified as 1\TP514081 and 2\TP514081. Please see Table 2 for land tenure details.

The Certificates of Title are provided at Attachment 2.

Table 2 Land tenure details

Address	SPI	Landowner details	Easements, caveats etc.
2140 Korumburra-Wonthaggi Road, Lance Creek, 3995	1\TP514081	Tabro Meat Pty Ltd of Level 2 36 Innovation Parkway, Birtinya QLD 4575	Mortgage AV806356M 30/06/2022, ANZ Fiduciary Services Pty Ltd Encumbrances referred to: – Easement to State Rivers and Water Supply Commission created by Instrument 731411 – Easement to State Rivers and Water Supply Commission created by Instrument 2333638 – Easement to Inverloch Waterworks – Trust created by Instrument B860119
	2\TP514081		
	1\TP119507	South Gippsland Region Water Corporation of 14-18 Pioneer Street, Foster VIC 3960	None.
	1\TP827073	Tabro Meat Pty Ltd of Level 2 36 Innovation Parkway Birtinya QLD 4575	Mortgage AV806356M 30/06/2022, ANZ Fiduciary Services Pty Ltd Encumbrances referred to: – Easement to State Electricity – Commission of Victoria created by Instrument 2333638

Address	SPI	Landowner details	Easements, caveats etc.
	13E\PP2901	Tabro Meat Pty Ltd of Level 2 36 Innovation Parkway Birtinya QLD 4575	Mortgage AV806356M 30/06/2022, ANZ Fiduciary Services Pty Ltd

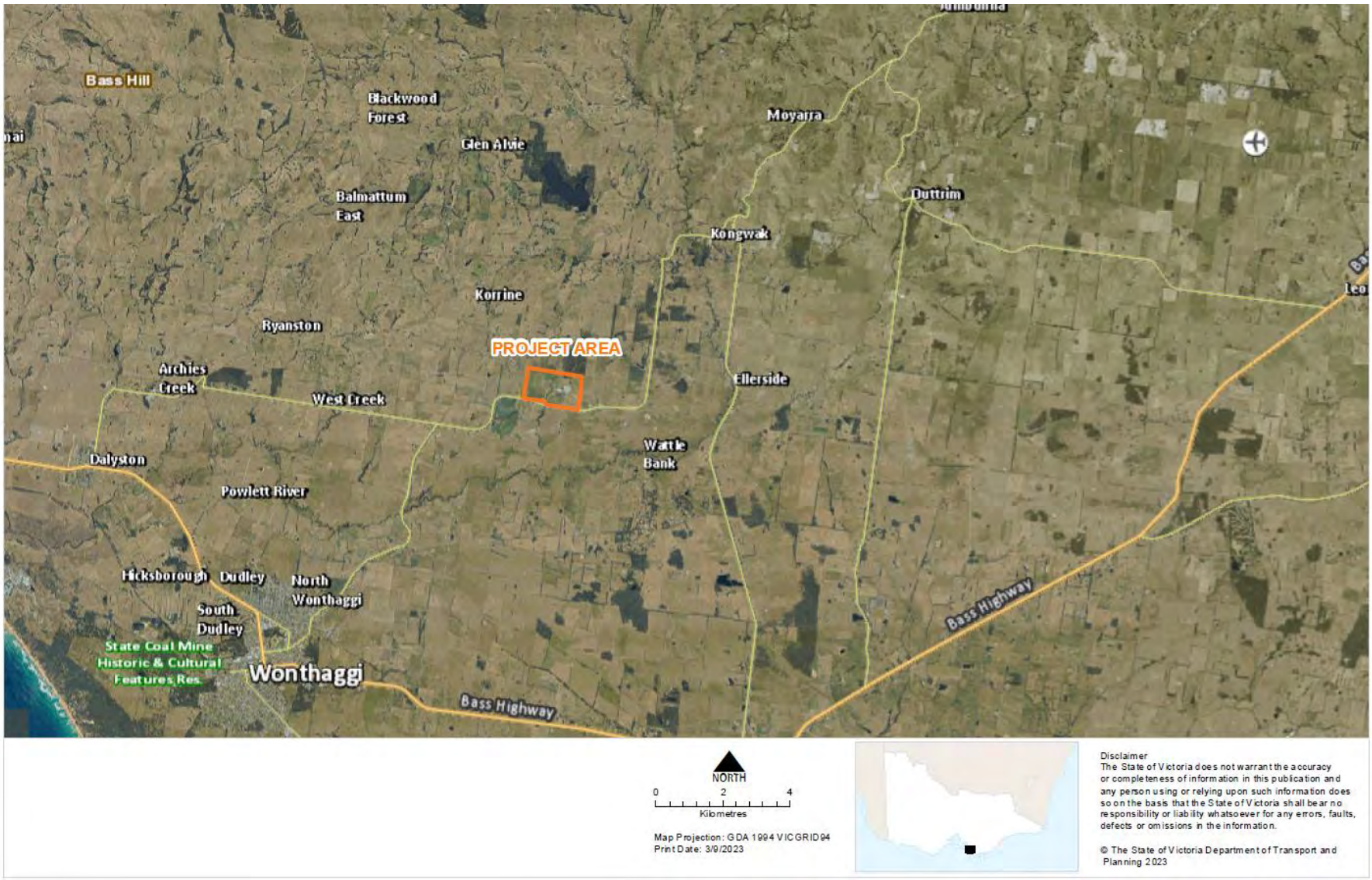


Figure 1 ***Project locality context***

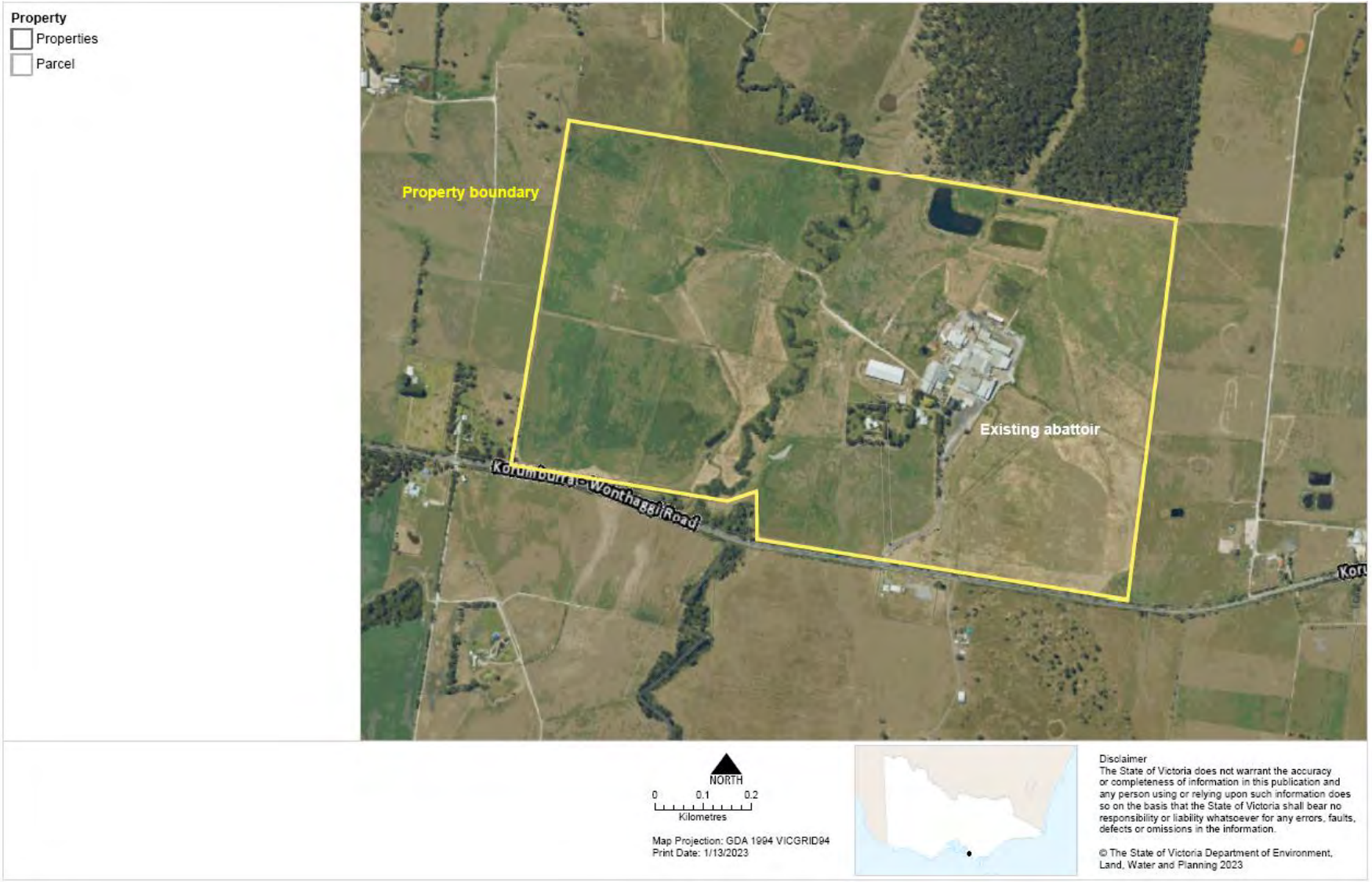


Figure 2 Site context

2. Project details

The following section describes the project details that encompass Stage 1 of the recommencement of operations at the abattoir facility.

2.1 Overview

Much of the existing equipment, infrastructure and processes at the site are non-compliant with current industry standards due to the abattoir ceasing operations for the past five years as well as a change in ownership. As such, several maintenance and replacement upgrades across the facility are required to improve the functioning and overall operations at the site. KGF intends to undertake these works over a period of 12 months and in a manner that presents low to no risk to the environment and human health. The majority of works will be undertaken within the existing facility footprint.

2.1.1 Buildings and works

The proposed buildings and works to be undertaken as soon as possible are outlined in Table 3 below.

Please note that internal works and maintenance that are exempt from permit requirements pursuant to clause 62.02 have been included to provide broader context of the overall project.

Table 3 Description of proposed works

Buildings and works	Overview	Permit required?
Internal works and maintenance	– General repair and maintenance of various machinery and facilities within the abattoir – Extension of and reconfiguration of south-west side boning room by 531 m^2 – New skillion roof structure covering on central area of building	**Yes**.
	– Resurfacing some areas of stockyard and improving stormwater management • Clean stormwater transported into natural waterways • Contaminated stormwater transferred to wastewater treatment plant (WWTP) – Replacement of blast freezer in north-east corner – Internal renovation of internal partitions and flooring materials in office facilities – Complete overhaul of refrigeration system including refurbishment of northern plant room and pipe work due to non-compliance of old refrigeration system – New gas boiler to replace coal boiler in the existing boiler house – Refit existing hanging chillers	No – exempt pursuant to clause 62.02.
External works	– Construction of an additional storage facility – Installation of a new Gas Fired Boiler to replace an old coal boiler (see Section 2.1.2) – Construction of a new front end to the WWTP to replace outdated front end treatment (see Section 2.1.3) – Upgrade of Ausnet high voltage supply – New water meter location near the front gate of the property with KGF potable water tank and transfer pumps to increase water supply to property – Upgrade of carpark to accommodate approximately 300 vehicles	**Yes**.

2.1.2 Abattoir operations

Operations at the abattoir will recommence using a staged approach across a number of months.

From April 2023, operations will involve the processing of livestock and the dispatch of carcases to boning rooms at third-party operators located in the Melbourne region. At this time, there will be a total of 36 staff on site during the hours of operation. The site will operate on weekdays, from Monday to Friday, and have standard operating hours between 6:00 am to 6:00 pm. Cattle deliveries will occur during standard operating hours, with expected initial deliveries starting with 10-20 heads of cattle per day. Cattle will be delivered in B-Double cattle trailers and will remain onsite for approximately 30 minutes. There will be one truck delivery per day initially.

From June 2023, abattoir operations will expand to include the boning of carcasses, whilst capacity is increased across other site operations. The abattoir is expected to receive towards 300 head of cattle per day by the end of 2023, with at least five (5) truck deliveries per day. At this stage, an additional 75 staff will be on site, totalling 111 staff on site during the hours of operation.

It is expected that approximately 26 trucks would be required to travel to and from the site per day for most of October to remove water from the site. It is assumed that these truck trips will be spread across the day, outside of site peak hours (occurring between 4:45am-5:45am, and 15:45pm-16:45pm). These additional truck movements are not expected to impact overall traffic movements on the main road.

2.1.3 Gas Fired Boiler

Currently there are two existing boilers (one coal and one gas) within the abattoir. Both of these boilers will be replaced with a single 5-megawatt LPG fired boiler with higher efficiency and lower emissions. The new boiler will provide the facility will hot water at 100 degrees Celsius and approximately 8000 kilograms per hour of steam. Specific details about the proposed gas fired boiler are summarised in Table 4 below. A service agreement with the supplier of the boiler will be put in place to ensure regular inspection and maintenance is carried out, as determined by the Australian Standard for boiler operations (AS 2593).

The gas fired boiler will be located in the north-west corner of the facility.

Table 4 Gas fired boiler model specifications

Specification	Unit
Supplier	O'Brien Energy Engineered
Model	OBYTRICE 8000
Boiler Type	Fire Tube
Burner	ELCO EK EVO
Fuel	LPG
Boiler Output	5MW
Steam Output	8000 kg/hr
Boiler Design Pressure	12 bar
Dimensions	6210mm x 3380mm x 3595mm (L x W x H)
Dry Weight	21000 kg

2.1.4 Wastewater treatment plant (WWTP)

A new primary WWTP has been proposed to improve the quality of effluent exiting the facility for irrigation. The WWTP will be constructed along the western boundary of the existing abattoir facility on an existing hard standing area.

Stage 1 includes the installation of dissolved air flotation (DAF) treatment and rotary screens which will treat a combination of the wastewaters from the facility to replace existing outdated front end treatment. The proposed plant is designed to process up to 100kL/hr of flow. The plant has been designed so that it has the capacity to treat water flows for when the abattoir is operating at a maximum potential future capacity of 600 head per day, however the facility will commence operations by processing 10-20 heads per day and will not operate at full capacity until all upgrades have been completed and separate approvals from Council and EPA have been sought.

Treated effluent will be recycled where possible to reduce the demand of fresh water. Treated effluent will come from the onsite dams and will be used to wash down concrete aprons, stockyards and for the initial wash of cattle. Solid waste, such as fat and bone, will be removed from the WWTP will be collected and sent offsite to a third-party rendering operation. The remainder of the solid waste removed from the plant, including paunch and DAF sludge will be dewatered and sent to a composter.

2.2 Environmental considerations

2.2.1 Traffic Impact Assessment

In January 2023, GHD prepared a Traffic Impact Assessment.

The key findings of this report are summarised below:

– While vehicle volumes along Korumburra-Wonthaggi Road are very low, the traffic volumes generated to and from the site on the internal access way is very high during peak hours
– Sight distances at the site entrance extend approximately 200 metres to the east and 300 metres to the west. Based on Table 3.2 of the Austroads *Guide to Road Design – Part 4a: Unsignalised and signalised intersections* the minimum sight distance for an access to a 100km/h road is 248 metres.
– There is no signage along Korumburra-Wonthaggi Road advertising the presence of the facility.
– The access to the site is relatively narrow with a crossover width of approximately 5.5 metres and an accessway width of approximately 4.9 metres. As such, two trucks cannot access the site simultaneously.
– Truck movements are expected to be relatively sporadic in and out of the site.

Based on these findings, the following recommendations were provided for future developments at the site:

– Widen the entry to the site by approximately 2 metres to allow the passage of two trucks concurrently. The redesign should be assessed with swept paths, which GHD would be happy to undertake with provision of CAD plans.
– Widen the accessway to the site by approximately 2 metres, to provide a carriageway width of approximately 6.9 metres, allowing for two trucks to pass concurrently.
– Provide additional signage at the property access and within the site, in advance to the access (ie. ‘Kilcoy Abattoir located 200m on left’).
– Provide additional signage along the Korumburra-Wonthaggi Road carriageway, indicating the presence of trucks and the presence of an upcoming side road

A copy of the Traffic Impact Assessment is provided at Appendix A.

2.2.2 Air & Odour

In January 2023, GHD prepared an Air Quality Assessment.

The assessment included the Environmental Protection Agency (EPA) separation distance assessment, the EPA Publication 1961 Level 1 Assessment of the gas fired boiler (GFB) and the EPA Publication 1883 Level 2 Assessment of the wastewater treatment plant (WWTP).

The key findings of this report are summarised below:

EPA Separation Distance Assessment

– A default separation distance of 500 metres was calculated, encompassing two residential receptors to the south of the site

EPA Publication 1961 Level 1 Assessment – GFB

– The emissions associated with operation of the GFB were classified under the first guiding principle in EPA Publication 1961, namely: Routine activities that have controls that are known to be effective.
– It was determined that a Level 1 assessment in accordance with EPA Publication 1961 was sufficient to inform the implementation of appropriate risk controls. The following was therefore provided:
    - A description of the emission sources in line with identifying hazards in Publication 1961
    - A description of the receiving environment in line with identifying hazards in Publication 1961
    - All the proposed risk controls and checks in line with implementing controls and checking controls in Publication 1961
    - A concise rationale justifying proposed approach against the three principles listed above
– Based on the Level 1 assessment outcomes, the air quality risk associated with the GFB and receiving environment is considered to be negligible and managed in accordance with the GED.

EPA Publication 1883 Level 2 Assessment – WWTP

– A level 2 assessment (source/pathway/receiving environment tool) undertaken by GHD in accordance with EPA Publication 1883 assesses the level of odour risk from the WWTP to be low. A low risk is categorised as not requiring further assessment.

Based on these findings, the assessment concluded that the proposed upgrades pose a low risk to air quality impacts and no further assessments are required.

A copy of the Air Quality Assessment is provided at Appendix B.

2.2.3 Noise

A Noise Impact Assessment was undertaken by GHD specialists in January 2023.

The key findings from this assessment are summarised below:

– A preliminary noise impact assessment was performed for a conservative operational scenario assuming simultaneous operation of all noise sources on the site
– Operational noise limits were established in accordance with EPA Publication 1826.4 – Noise Protocol provisions with the most stringent night-time noise limit of 36 dB(A) at the nearest identified noise sensitive receivers
– Due to the limited available information on equipment for the upgrade, a number of assumptions and sound power level estimations have been utilised to provide a conservative operational noise assessment
– The worst case predicted operational noise levels with the proposed upgrades with all identified major noise sources operating simultaneously were predicted to comply with the established relevant Noise Protocol noise limits at each identified noise sensitive receivers without additional noise mitigation measures
– No characteristic noise penalties were considered in the predicted noise levels. It is noted that the existing operations were not audible at the noise monitoring locations and any potential characteristic noise penalties would be due to the equipment as part of the facility reactivation.

– As the assessment has been based on a number of assumptions, further information on selected equipment would be required to conduct an in-depth analysis for any tonality penalty.

Based on these findings, the following will be taken into consideration during the final design, installation, and operation of future stages where required:

– When designing the plant, the following design aspects should have careful consideration during the selection of plant and equipment:
    - Minimising the generation of sound energy
    - Minimising the objectionable characteristics of the sound through selection or design equipment to minimise any tonal or other noise characteristics that may evoke penalty in accordance with the Noise Protocol
    - Sound power for final choice of equipment should not exceed the assumed sound power levels and most likely be less than that since full operation of the site will involve additional noise sources,
    - Reducing sound energy using noise mitigation such as sound absorption, acoustic enclosures, local noise barriers and the like
    - Increasing the acoustic performance of building/enclosure facades
    - Appropriate location of any louvres for building/enclosures
– It is recommended that another prediction of site noise emissions be undertaken during the detailed design stage of the Project to confirm that relevant noise limits are met and if any appropriate noise mitigation measures should be considered where relevant

The Noise Impact Assessment is included as Appendix C.

2.2.4 Water Management

The abattoir will continue to receive its potable water supply from South Gippsland Water (SGW). This water is treated onsite with additional chlorination before being utilised in the facility. Recycled treated wastewater is also used for cleaning purposes, such as washing down the stockyards.

Softened water is required to be supplied to the gas fired boiler to avoid corrosion. This water will be softened before being sent to the steam plant and chemical dosing is dependent on the boiler capacity and operation times. The boiler will operate at maximum efficiency and provide 95 per cent condensate to the boiler to reduce water demand. Blowdown from the boiler will be drained and directed to the WWTP.

Chemicals used for softening and chlorinating water will be contained within self-bunded pallets on concrete flooring.

Due to the volume of wastewater produced during the operation of the site, wastewater will be trucked out of the site. While the truck volumes will vary across the year based on the capacity of the on-site dams, at the peak, up to 26 trucks per day will need to remove wastewater from the site. It is not expected that these trips will occur during the peak hours.

2.2.5 Waste Management

The recommencement of operations will result in several waste streams. The proposed upgrades seek to prevent waste where possible and improve onsite treatment to reduce environmental risk. The majority of solid waste created will be transported off-site to third-party operators. The waste streams produced onsite by the facility include abattoir wastewater, abattoir solid waste and paunch waste as a result of animal effluent and residues, stockyard washing and animal processing.

As discussed in Section 2.1.4, a new WWTP will be constructed on an existing concreted area enclosed within the facility. The WWTP will receive the abattoir wastewater and screen out solids, including fat, bone, and bottom dwelling and top floating sludges.

Solid waste that is removed from the WWTP will be collected and stored in containers on hardstand areas, before being transported offsite to third-party operators where the waste can be appropriately treated. Stormwater runoff from these hardstand areas will be directed to the WWTP to prevent contamination of the surrounding land.

There is no proposed discharge to the surrounding land or groundwater due to the risk of contamination from potential spills from wastewater treatment substances. All treatments will be carried out in tanks and vessels above ground on concrete surfaces.

Waste trucks will collect general waste from site twice per week and it is assumed that other deliveries will comprise up to 10 trips per week. As such, there may be 2-3 trips per day generated by waste trucks and delivery vehicles. It is not expected that these trips will occur during the peak hours.

2.2.6 Land Capability Assessment (LCA)

RMCG prepared a wastewater assessment for the project in November 2022, which included a high-level assessment of the ability of onsite land to receive wastewater irrigation as well as the area required to dispose of forecasted treated wastewater volumes at final site capacity (600 head of cattle). GHD has reviewed the report prepared by RMCG (2022), which indicates that a new winter storage will be required (410 ML) as well as an estimated irrigation area of 150 hectares for irrigation. Further investigations are planned to determine the most appropriate and sustainable approach to the management of wastewater at full operating capacity. In the interim, it is necessary to identify the best available options for the shorter-term management of wastewater (for projected wastewater volumes for between 10 – 300 head of cattle), with consideration to the management of human health, animal health and environment risks. On this basis, the following is proposed:

- As discussed in Section 2.2.4, wastewater will be trucked offsite due to the volume of wastewater produced each day. At peak, up to 26 trucks per day will be required to transport the wastewater offsite.
- Identification of a potential irrigation area that meets the requirements for setbacks to sensitive receptors (i.e., buildings, residences, waterways) as specified in EPA Publication 1911.2, conservatively assuming minimum wastewater quality of Class C under the guidelines during the initial Stage of operations. For later stages (not the subject of this application) it is planned to increase the microbial quality of wastewater to Class B, which will permit the use of treated wastewater for wash-down water
- Soil and groundwater sampling program to confirm the suitability of the proposed area for short-term irrigation (< 2 years)
- Environmental and human health risk assessment based on proposed site operations in Stage 1 of the development and the application of mitigation measures to minimise risks to animal and human health and the environment in general accordance with the Australian Guidelines for Wastewater Recycling (AGWR 2006), including but not limited to:
    - Verification monitoring of suitability of wastewater for reuse prior to land application in accordance with limits for microbial quality, biological oxygen demand, suspended solids and pH (as per EPA Publication 1911 and AGWR (2006) and limits determined by the LCA for salt, nutrients and other potential contaminants of concern
    - Strict limitations of the end uses of the treated wastewater to that permitted for Class C wastewater, without helminth control (irrigation of pasture and fodder for sheep, goats and horses with no grazing of livestock permitted)
    - No public access to the irrigation area, enforced by signage and fencing and staff inspections of the area
    - Use of low-pressure spray irrigation, with no irrigation during high winds
    - Irrigation in strict accordance with water balances to prevent run-off
    - Harvest and removal of crops from site (for the removal of nutrients from the soil)
    - Exclusion of site staff from the irrigation area during irrigation and for a period following irrigation (i.e., a withholding period in accordance with guidelines)
    - Provision of training for staff for the safe handling of wastewater and occupational controls to limit exposure

2.2.7 Flora & Fauna

The project site and surrounding area is predominantly used for agricultural and farming land and has been mostly cleared of native vegetation over time. Trees are present mainly along waterways and remnant vegetation is present within the road reserves.

A desktop assessment using the online vegetation software Nature Kit 2.0 indicated the presence of two Ecological Vegetation Classes (EVC) within the Gippsland Plain bioregion within the property.

Some scattered patches of EVC 53 (Swamp Scrub) with a conservation status of endangered were mapped near the project footprint and to the south of the site. Some EVC 16 (Lowland Forest) with a conservation status of vulnerable were mapped to the north-east and south-west corners of the property.

The proposed works have been confined to the existing footprint of the abattoir and the works are not expected to impact any native vegetation, waterways, or waterbodies within the site.

2.2.8 Cultural Heritage

GHD prepared a Cultural Heritage Due Diligence Assessment in January 2023 as part of the concept design phase of the project.

The key findings from this assessment are outlined below:

– Considering the close proximity of Lance Creek and its cultural heritage sensitivity, there is potential for Aboriginal cultural heritage material to be located within the study area
– The property is located within a site of Aboriginal Cultural Heritage Sensitivity (ACHS), triggered by the presence of Lance Creek running through the study area
– The study area's history has been evaluated to assess the potential for archaeological sites within the study area
– No approvals for the proposed works are required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for heritage matters. Please note that this does not include approval requirements under the *EPBC Act* for any other matters of National Environmental Significance.
– The proposed works are exempt from a mandatory CHMP under Regulation 46(3) of the *Aboriginal Heritage Regulation 2018*. The land was lawfully being used as an abattoir immediately before 28 May 2007, and the works would be associated with the use of the existing abattoir infrastructure.
– A review of known Aboriginal Places in the Bass Coast Shire indicates they share similarities in landform and geology to the study area and are often situated near waterways. However, the proposed works are contained within Brownfield (i.e., the existing abattoir footprint) areas which have low potential for Aboriginal cultural heritage material to be present, and therefore a voluntary CHMP is not recommended. Those Greenfield (i.e., paddocks) areas around the abattoir footprint, particularly around Lance Creek, are likely to have potential for Aboriginal cultural material and if works extend into Greenfield areas, then a voluntary CHMP should be considered to manage Aboriginal heritage risk.
– Approvals are not currently required for heritage matters under the *Heritage Act 2017* or *Planning and Environment Act 1987*. No historical structures of State or local significance have been identified in the study area at the time of the assessment but, given the history of the study area it is reasonably likely that sites of archaeological value occur within the study area. It is recommended that further historical heritage investigations be undertaken.

A copy of the Cultural Heritage Due Diligence Assessment has been provided at Appendix D.

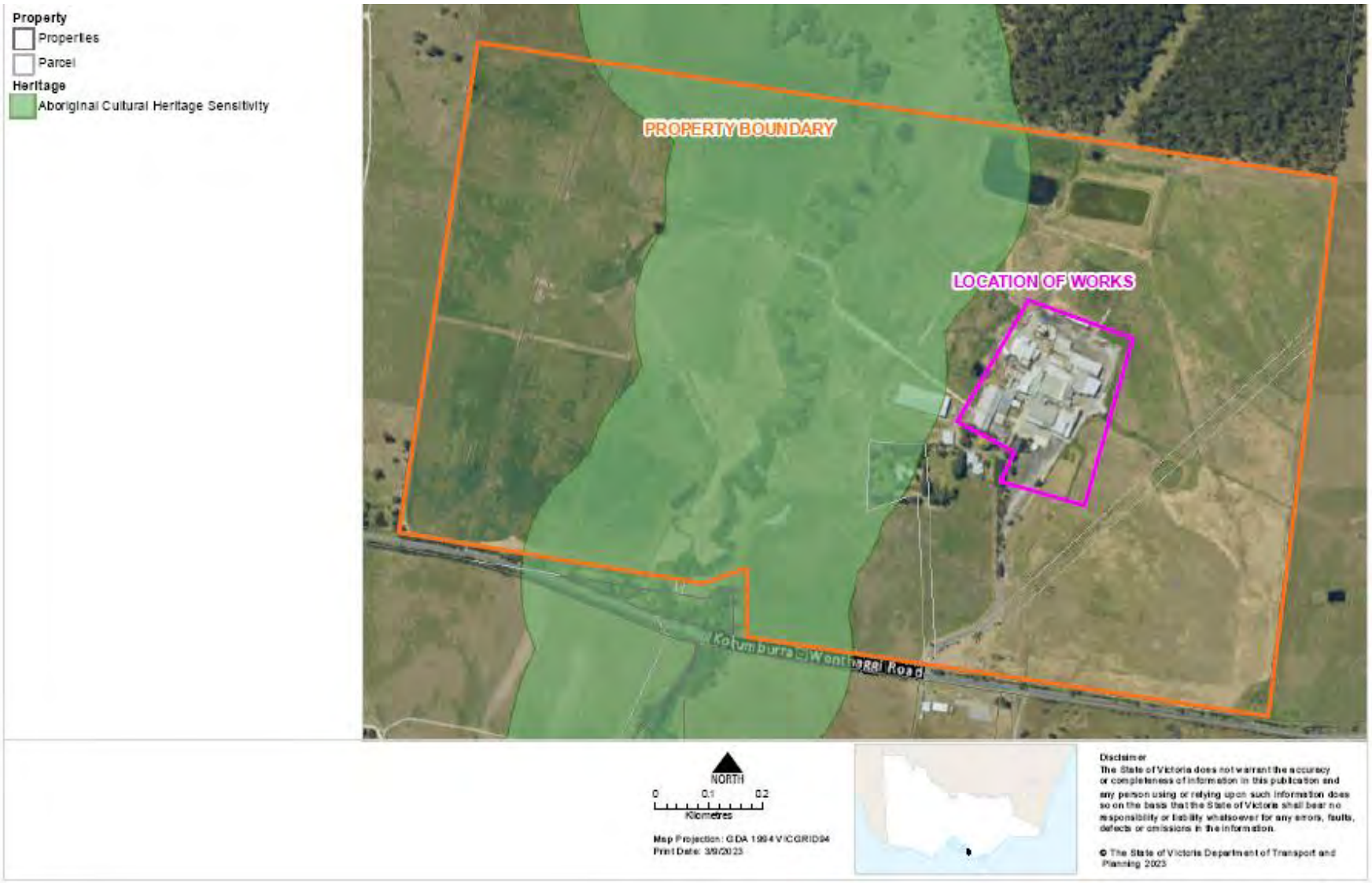


Figure 3 ***Aboriginal Cultural Heritage Sensitivity***

2.2.9 Stakeholder Consultation

Community and stakeholder consultation has been undertaken prior to the preparation of this application. Initial community consultation was undertaken across August and September of 2022 at the existing Tabro Meat abattoir facility. KGF representatives hosted an introductory session on 24 August 2022 with the immediate neighbours to the property to outline the company's intentions going forward with ownership and expansion of the abattoir.

A second series of individual consultations were undertaken with surrounding neighbours in September 2022. These individual consultations revolved around the following discussions:

– Environmental matters being included in the EPA Permissions Pathway Form (F1021)
– Proposed works being included in the EPA Permissions Pathway Form (F1021)

There were no issues or concerns raised by any of the neighbours during these discussions regarding the proposed works or the intentions of KGF moving forward. A representative of Tabro Meat has been assigned responsibility for communicating and consulting with each neighbour whenever new information about the proposed works and development becomes available.

KGF understands the importance and value of maintaining transparency and clear communication with the immediate neighbours and the wider community to uphold positive relationships and minimise risk to human health and the environment. Once the designs are finalised and the plans are approved by the EPA, KGF will hold an informational session with stakeholders and ensure ongoing engagement with the community.

Further information about the community and stakeholder consultation undertaken is included at Section 5 of the EPA Licence Exemption Application provided at Appendix E.

3. Planning scheme provisions

The *Planning and Environment Act 1987* is the primary legislations for planning the use, development, and protection of land in Victoria through the creation of Planning Schemes. The project is subject to the provisions of the Bass Coast Planning Scheme (the 'Planning Scheme'), and the *Planning and Environment Act 1987*.

This section outlines the planning provisions under the Bass Coast Planning Scheme that are relevant to the project including a review of state and local planning policy frameworks, zones, overlays, and particular provisions.

3.1 Meaning of terms

3.1.1 Land use definition

The proposed works are considered to meet the definition of Abattoir, as outlined in the table to Clause 73.03:

> *Land used to slaughter animals, including birds. It may include the processing of animal products.*

The proposed works are defined as abattoir as they are associated with the slaughtering and processing of cattle and livestock.

3.2 Planning Policy Framework (PPF)

The Planning Policy Framework (PPF) seeks to ensure that the objectives of planning in Victoria (as set out in Section 4 of the *Planning and Environment Act 1987*) are met through the appropriate land use and development planning policies. The relevant Planning Policies are discussed below.

Clause 31.02-1S – Bushfire planning

The objective of Clause 13.02-1S is *to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

Relevant strategies within this Clause include:

- *Give priority to the protection of human life by:*
  - *Prioritising the protection of human life over all other policy considerations.*
  - *Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.*
- *Identify bushfire hazard and undertake appropriate risk assessment by:*
  - *Considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1993 or regulations made under that Act.*
  - *Considering and assessing the bushfire hazard on the basis of:*
    - *Landscape conditions - meaning conditions in the landscape within 20 kilometres (and potentially up to 75 kilometres) of a site;*
    - *Local conditions - meaning conditions in the area within approximately 1 kilometre of a site;*
    - *Neighbourhood conditions - meaning conditions in the area within 400 metres of a site; and*
    - *The site for the development.*
  - *Consulting with emergency management agencies and the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*
- *Plan to strengthen the resilience of settlements and communities and prioritise protection of human life by:*
  - *Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reducing bushfire risk overall.*

- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

– *Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are important areas of biodiversity.*

A Bushfire Management Overlay (BMO) covers part of the north-eastern area of the site (see Figure 6). The existing abattoir and associated facilities are not located within the BMO, and all proposed upgrades have been designed to avoid this area. The project and upgrades to the abattoir have been designed to minimise bushfire hazard, taking into consideration the surrounding natural environment, nearby properties, and topography.

Clause 13.03-1S – Floodplain management

The objective of Clause 13.03-1S is *to assist the protection of:*

– *Life, property and community infrastructure from flood hazard, including coastal inundation, riverine and overland flows.*

– *The natural flood carrying capacity of rivers, streams and floodways.*

– *The flood storage function of floodplains and waterways.*

– *Floodplain areas of environmental significance or of importance to river, wetland or coastal health.*

Relevant strategies to support this Clause include:

– *Avoid intensifying the impact of flooding through inappropriately located use and development.*

– *Plan for the cumulative impacts of use and development on flood behaviour.*

– *Locate use and development that involve the storage or disposal of environmentally hazardous industrial and agricultural chemicals or wastes and other dangerous goods (including intensive animal industries and sewage treatment plants) outside floodplains unless site design and management is such that potential contact between such substances and floodwaters is prevented, without affecting the flood carrying and flood storage functions of the floodplain.*

– *Ensure land use on floodplains minimises the risk of waterway contamination occurring during floods and floodplains are able to function as temporary storage to moderate peak flows and minimise downstream impacts.*

The property is partially covered by a Land Subject to Inundation Overlay (LSIO) to the west of the site, shown in Figure 5. The existing abattoir footprint is located outside the LSIO, and the proposed upgrade works are not expected to intensify the impact of flooding due to the works being located outside the LSIO. Abattoir wastewater will be treated in the proposed WWTP, where solid and paunch waste will be transported off-site to third-party rendering operations (see Section 2.2.5). The WWTP will be located outside the LSIO and will minimise the risk of waterway contamination.

Clause 13.05-1S – Noise management

The objective of Clause 13.05-1S is *to assist the management of noise effects on sensitive land uses*.

Relevant strategies to support this Clause include:

– *Ensure that development is not prejudiced and community amenity and human health is not adversely impacted by noise emissions.*

A Noise Impact Assessment (see Appendix C) was undertaken to determine noise impacts and outline recommendations for noise mitigation measures. New equipment to facilitate the upgrades will be carefully selected to minimise the generation of sound energy, minimise objectional characteristics of sound, utilise sound absorption, acoustic enclosures and noise barriers and increase the acoustic performance of building facades.

Due to the type and scale of operations undertaken at the abattoir, some noise pollution is expected. However, the isolated location of the facility and the integration of noise mitigation measures informed by the assessments mean that community, the amenity and human health are not expected to be impacted by noise emissions.

A further noise study will be prepared to support any further applications to Council for later stages to bring the facility back to its full capacity of 600 head of cattle per day.

For further information, refer to Section 2.2.3.

Clause 13.06-1S – Air quality management

The objective of Clause 13.06-1S is *to assist the protection and improvement of air quality*.

Relevant strategies to support this Clause include:

– *Ensure, wherever possible, that there is suitable separation between land uses that pose a human health risk or reduce amenity due to air pollutants, and sensitive land uses (residential use, child care centre, school, education centre, residential aged care centre or hospital).*

The abattoir is well-isolated from other land uses, in particular sensitive land uses. Extensive technical assessments have been undertaken to assess the risk of odour impact across all operations to identify hazard potential, odour exposure and environment sensitivity. These results have informed the design, construction and operation measures that will be undertaken to minimise the impacts of odour and air pollutants to the surrounding environment. An Air and Odour Assessment concluded that the proposed upgrades pose a low risk to the surrounding air quality.

For further information, refer to Section 2.2.2 and Appendix B.

Clause 13.07-1S – Land use compatibility

The objective of Clause 13.07-1S is *to protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.*

Relevant strategies to support this Clause include:

– *Ensure that use or development of land is compatible with adjoining and nearby land uses.*
– *Avoid or otherwise minimise adverse off-site impacts from commercial, industrial and other uses through land use separation, siting, building design and operational measures.*

This project seeks to resume operations at the existing abattoir facility. There is little available information regarding the historical land use of the site, however aerial imagery suggests the facility commenced operations around 1950. The site is located within rural agricultural farming land and is appropriately set back from other land uses. The use of this land for the abattoir is compatible with the exiting, adjoining and surrounding land uses.

Clause 14.02-2S – Water quality

The objective of Clause 14.02-2S is *to protect water quality*.

Relevant strategies include:

– *Protect reservoirs, water mains and local storage facilities from potential contamination.*
– *Ensure that land use activities potentially discharging contaminated runoff or wastes to waterways are sited and managed to minimise such discharges and to protect the quality of surface water and groundwater resources, rivers, streams, wetlands, estuaries and marine environments.*

As discussed in Section 2.2.6, wastewater assessment was previously prepared for the project which outlined recommendations for water quality management to minimise risk to human and animal health and the wider environment. These recommendations include strict limitations of the end uses of treated wastewater and irrigation in accordance with water balances to prevent run-off.

Further investigations will be undertaken to determine the most appropriate and sustainable approach to wastewater management at full operating capacity.

Clause 15.03-2S – Aboriginal cultural heritage

The objective of Clause 15.03-1S is *to ensure the protection and conservation of places of Aboriginal cultural heritage significance*.

Relevant strategies include:

– *Identify, assess and document places of Aboriginal cultural heritage significance, in consultation with relevant Registered Aboriginal Parties, as a basis for their inclusion in the planning scheme.*
– *Provide for the protection and conservation of pre-contact and post-contact Aboriginal cultural heritage places.*
– *Ensure that permit approvals align with the recommendations of any relevant Cultural Heritage Management Plan approved under the Aboriginal Heritage Act 2006*.

The property is located within a site of ACHS (see Figure 3), triggered by the presence of Lance Creek running through the property. A Cultural Heritage Due Diligence Assessment found that the existing abattoir footprint is unlikely to have Aboriginal cultural heritage material present, however the surrounding paddocks and area around Lance Creek may. The assessment concluded that the proposed works are not considered a high impact activity and the project area does not fall within a designated area of CH sensitivity, therefore a mandatory CHMP is not required. A voluntary CHMP has not been recommended at this stage.

For further information, refer to Section 2.2.8 or Appendix D.

Clause 17.01-1S – Diversified economy

The objective of Clause 17.01-1S is *to strengthen and diversify the economy*.

Relevant strategies to this Clause include:

– *Protect and strengthen existing and planned employment areas and plan for new employment areas.*
– *Facilitate regional, cross-border and inter-regional relationships to harness emerging economic opportunities.*
– *Improve access to jobs closer to where people live.*
– *Support rural economies to grow and diversify.*

Once operational, the abattoir will initially be operated by approximately 36 staff which will increase to 111 staff by June 2023. It will provide new employment opportunities for the surrounding community and strengthen and diversify the rural economy. The produce will be transported to the Port of Melbourne and exported overseas, facilitating regional and international relationships.

Clause 19.03-3S – Integrated water management

The objective of Clause 19.03-3S is to sustainably manage water supply and demand, water resources, wastewater, drainage and stormwater through an integrated water management approach.

Relevant strategies to support this Clause include:

– *Plan and coordinate integrated water management, bringing together stormwater, wastewater, drainage, water supply, water treatment and re-use, to:*
  - *Protect downstream environments, waterways and bays.*
  - *Minimise drainage, water or wastewater infrastructure and operational costs.*
– *Ensure that development protects and improves the health of water bodies including creeks, rivers, wetlands, estuaries and bays by:*
  - *Managing industrial and commercial toxicants in an appropriate way.*
  - *Requiring appropriate measures to mitigate litter, sediment and other discharges from construction sites*.

A new primary wastewater treatment will be constructed to protect the quality of wastewater entering the existing lagoon system. Treated effluent will be recycled where possible to clean the stockyards, concrete aprons, and cattle. It will also reduce the demand for freshwater.

For further information, refer to Section 2.2.4.

3.3 Local Planning Policy Framework (LPPF)

The following provisions and associated objectives of the LPPF are relevant to the proposal.

Clause 12.05-2L-02 – Landscape character areas

The objective of Clause 12.05-2L-02 is *to protect the landscape character of specific areas in the Shire for their visual, environmental, and cultural qualities*.

The abattoir is sited within the Bunurong Coast and Hinterland landscape. The abattoir exists within a large expanse of rural farming land and will not impact any significant natural features or limit views due to the scale and setbacks.

Clause 13.02-1L – Bushfire planning

The relevant strategies within Clause 13.02-1L include:

– *Site, design and construction development to mitigate bushfire risk*
– *Provide necessary bushfire protection measures, including:*
  - *Defendable space*
  - *A dedicated fire-fighting water supply*
  - *Fire authority access to and within the land*

A Bushfire Management Overlay (BMO) covers part of the north-eastern area of the site. The existing abattoir and associated facilities are not located within the BMO, and all proposed upgrades have been designed to avoid this area. The project and its associated works will result in no net increase in risk to existing and future communities, property, and infrastructure. The project and upgrades to the abattoir have been designed to minimise bushfire hazard, taking into consideration the surrounding natural environment, nearby properties, and topography.

Clause 13.03-1L – Floodplain management

The relevant strategies of Clause 13.03-1L include:

– *Preserve the natural flood carrying capacity of rivers, streams and floodways and the flood storage function of floodplains.*

The property is partially covered by a Land Subject to Inundation Overlay (LSIO) to the west of the site, shown in Figure 5. The existing abattoir footprint is located outside the LSIO and the proposed upgrade works are not expected to intensify the impact of flooding. All waste products, including wastewater, will be located outside the floodplain. Abattoir wastewater will be treated in the proposed WWTP, where solid and paunch waste will be transported off-site to third-party rendering operations (see Section 2.2.5).

3.4 Planning controls

This section provides an overview of the relevant planning controls and planning permit triggers for the site.

3.4.1 Zoning

The following planning zones apply to the site:

– Farming Zone (FZ)

Refer to Figure 4 for a map of the planning zones.

3.4.1.1 Clause 35.07 – Farming Zone

The site is wholly located within the Farming Zone (FZ).

The purpose of Clause 35.07 is to:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To provide for the use of land for agriculture.*
- *To encourage the retention of productive agricultural land.*
- *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
- *To encourage the retention of employment and population to support rural communities.*
- *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*
- *To provide for the use and development of land for the specific purposes identified in a schedule to this zone.*

In accordance with Clause 35.07, a permit is required for land used for an abattoir and for buildings and works associated with a section 2 use (abattoir).

3.4.2 Overlays

The following planning overlays apply to the site:

- Land Subject to Inundation Overlay (LSIO)
- Bushfire Management Overlay (BMO)

Refer to Figure 5 for a map of the planning overlays.

3.4.2.1 Clause 44.04 – Land Subject to Inundation Overlay

The site falls partially within a Land Subject to Inundation Overlay (LSIO).

The purpose of Clause 44.04 is to:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify flood prone land in a riverine or coastal area affected by the 1 in 100 (1 per cent Annual Exceedance Probability) year flood or any other area determined by the floodplain management authority.*
- *To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, responds to the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.*
- *To minimise the potential flood risk to life, health and safety associated with development.*
- *To reflect a declaration under Division 4 of Part 10 of the* Water Act, 1989*.*
- *To protect water quality and waterways as natural resources by managing urban stormwater, protecting water supply catchment areas, and managing saline discharges to minimise the risks to the environmental quality of water and groundwater.*
- *To ensure that development maintains or improves river, marine, coastal and wetland health, waterway protection and floodplain health.*

Pursuant to Clause 44.04-2, a permit is required to construct a building or to construct or carry out works. However, the proposed upgrade works do not fall within the LSIO and therefore do not require a permit under this provision.

3.4.2.2 Clause 44.06 – Bushfire Management Overlay

The north-east area of the site falls within a Bushfire Management Overlay (BMO).

The purpose of Clause 44.06 is to:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

Pursuant to Clause 44.06-2, a permit is required to construct buildings and works associated with industry (abattoir). However, the proposed works are not located within the BMO and therefore do not required a permit under this provision.

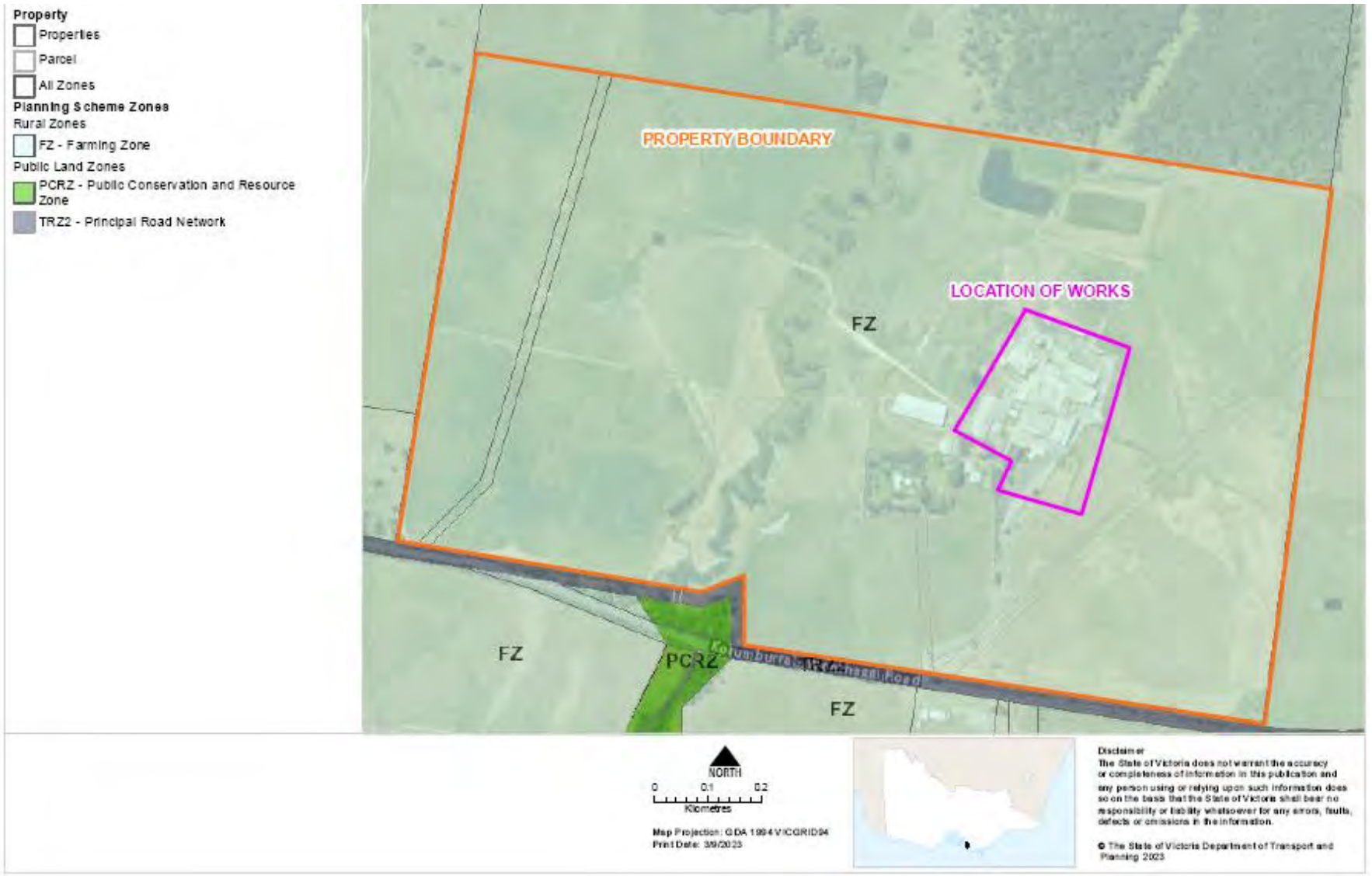


Figure 4 Zoning

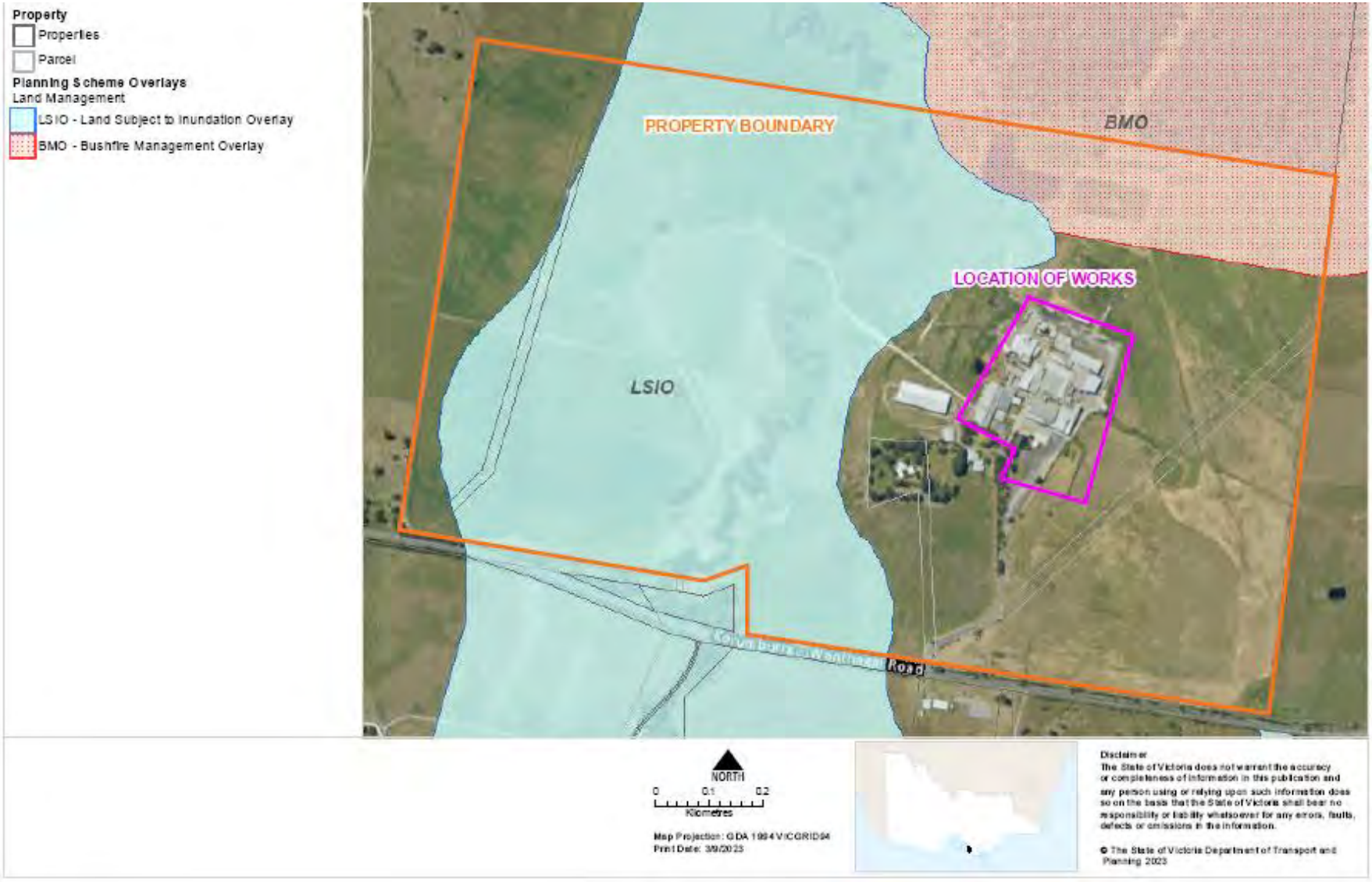


Figure 5 Planning overlays

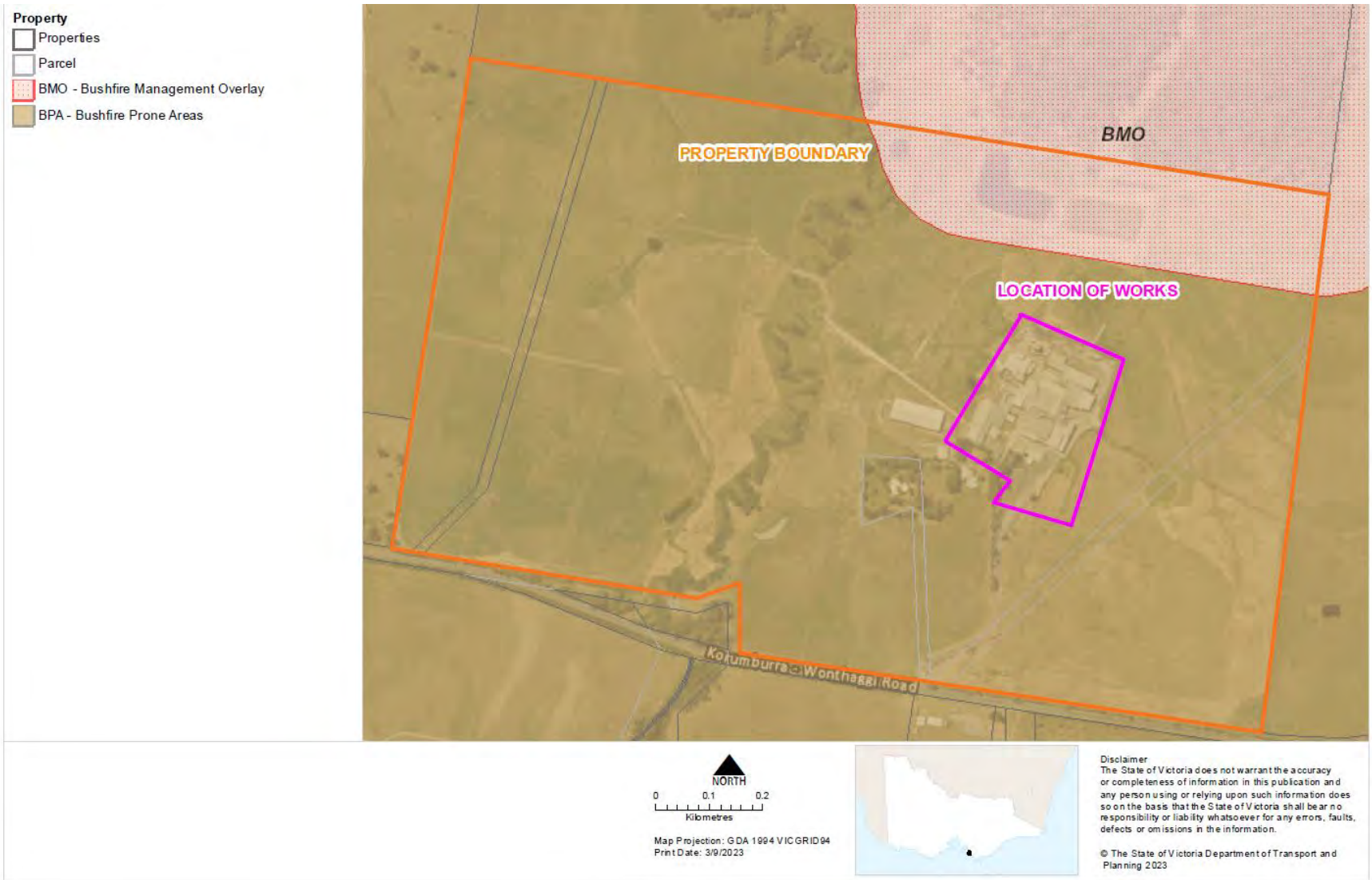


Figure 6 Bushfire risk

3.5 Particular provisions

3.5.1 Clause 52.06 – Car parking

Clause 52.06 applies to a new use. The purpose of Clause 52.06 is to:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

Clause 52.06-2 states that *before a new use commences, the number of car parking spaces required under Clause 52.06-2 or in a schedule to the Parking Overlay must be provided to the satisfaction of the responsible authority in one or more of the following ways:*

- *On the land; or*
- *In accordance with a permit issued under Clause 52.06-3; or*
- *In accordance with a financial contribution requirement specified in a schedule to the Parking Overlay.*

Under Clause 52.06-2, a permit is required to:

- *Reduce (including reduce to zero) the number of car parking spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay.*
- *Provide some or all of the car parking spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay on another site.*

Under Clause 52.06-5, the number of car parking spaces for this project is 2.9 per 100 m^2 of net floor area.

Clause 52.06-5 outlines the required number of car parking spaces that must be provided for a particular land use. For this project, 2.9 car parking spaces must be provided per 100 m^2 of net floor area. The net floor area for the abattoir is 12,303 m^2, therefore 356 car parking spaces are required under Clause 52.06-5.

Clause 52.06-7 – Applications to reduce the car parking requirement

Any application to reduce the number of required car parking spaces outlined in Clause 52.06-5 must be accompanied by a Car Parking Demand Assessment.

This application proposes the construction of an open carpark with 301 car spaces onsite. This will generate a shortfall of 55 spaces, triggering the conditions of clause 52.06-7.

The application requirements and decision guidelines are provided at Section 4.2.

3.5.2 Clause 52.29 – Land adjacent to the Principal Road Network

The purpose of Clause 52.29 is to:

- *To ensure appropriate access to the Principal Road Network or land planned to form part of the Principal Road Network.*
- *To ensure appropriate subdivision of land adjacent to Principal Road Network or land planned to form part of the Principal Road Network.*

Pursuant to Clause 52.29, a permit is required to create or alter access to a road in the Transport Zone 2 (TRZ2).

The proposed works that form part of this application do not include the creation or alteration of access to Korumburra-Wonthaggi Road, therefore a permit under Clause 52.29 is not required.

3.5.3 Clause 52.34 – Bicycle facilities

The purpose of Clause 52.34 is:

- *To encourage cycling as a mode of transport.*
- *To provide secure, accessible, and convenient bicycle parking spaces and associated shower and change facilities.*

Clause 52.34-1 states that *a new use must not commence or the floor area of an existing use must not be increased until the required bicycle facilities and associated signage has been provided on the land.*

Clause 52.34-5 sets out the number and type of bicycle facilities that must be provided for a use. For this project, one bicycle space must be provided per 1000 m^2 of net floor area to accommodate employees and residents. The bicycle spaces must be provided via either a bicycle locker or at a bicycle rail within a lockable compound.

If five or more employee bicycle spaces are required, then one shower must be provided to accommodate the first five bicycle spaces, plus an additional one shower per 10 employee bicycle spaces thereafter. One change room or direct access to a communal change room to each shower must be provided. The change room may be a combined shower and change room.

Based on the net floor area of the abattoir, a total of 12 bicycle spaces and one (1) shower must be provided.

End-of-trip facilities, including toilets and showers, are already present onsite. The required bicycle racks will be provided once the application is approved.

3.5.4 Clause 53.10 – Uses with potential adverse impacts

The purpose of Clause 53.10 is *to identify those types of uses and activities, which if not appropriately designed and located, may cause offence or unacceptable risk to the neighbourhood*.

Clause 53.10-1 outlines the minimum distance a use associated with an industry, utility installation or warehouse must be from any part of the land to:

- *land (not a road) in an Activity Centre Zone, Capital City Zone, Commercial 1 Zone, Docklands Zone, residential zone or Rural Living Zone; or*
- *land used for a hospital, an education centre or a corrective institution; or*
- *land in a Public Acquisition Overlay to be acquired for a hospital, an education centre or a corrective institution.*

A land use or activity associated with animal processing has a threshold distance of 1000 metres.

There are no conflicting land uses or activities are located within 2 km of the property.

As discussed in Section 1, KGF has engaged in ongoing discussions with the EPA as a determining referral authority and has applied for a Development Licence.

4. Planning assessment

For this project, a planning permit is required for:

– The use of land for an abattoir and for buildings and works under Clause 35.07 FZ
– An application to reduce the number of parking spaces required under Clause 52.06 Car Parking

An assessment of the project against the relevant planning controls outlined in Section 3 of this report is provided below.

4.1 Clause 35.07 – Farming Zone

A planning permit is sought for the use of land for an abattoir and associated buildings and works within the FZ, pursuant to clause 35.07-1.

The purpose of clause 35.07 is to:

– *To provide for the use of land for agriculture.*
– *To encourage the retention of productive agricultural land.*
– *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
– *To encourage the retention of employment and population to support rural communities.*
– *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.*
– *To provide for the use and development of land for the specific purposes identified in a schedule to this zone.*

The proposed use of the site as an abattoir is considered appropriate due to the prior historical use of the site as an abattoir. The abattoir facilities from its previous operations still remain on the property and the supporting infrastructure and services remain largely operational. The proposal relies substantially on the existing buildings and infrastructure at the site to minimise land use consumption and construction activities. These proposed works involve upgrades to the existing facilities and increase the existing footprint to 12,303 m^2.

The surrounding area is a predominantly rural agricultural landscape, supporting grazing paddocks and other farming operations as well as parkland. There are no sensitive land uses located within a close proximity to the site.

Due to the long-term operation of the abattoir, there will not be a substantial loss to productive agricultural land. Additionally, this use is not expected to limit the operation and expansion of adjoining and nearby agricultural uses.

Once operational, the abattoir will provide substantial economic benefits by providing additional employment opportunities and diversifying the rural economy. The abattoir is expected to provide up to 111 jobs by June 2023. The produce will be transported to the Port of Melbourne and exported overseas, facilitating regional and international relationships.

This planning permit application has been informed by a number of technical assessments to ensure the land is managed appropriately and sustainably. The proposed upgrades have been respectfully sited and designed to ensure the works footprint does not extend beyond the existing footprint. The external façade of the abattoir facilities will only experience necessary minor upgrades to ensure the safe and efficient functioning of operations.

The existing site is set back approximately 300 metres from Korumburra-Wonthaggi Road. The scale and siting of the buildings and works will not have a notable impact on the surrounding landscape, significant vistas, or amenity due to their longstanding establishment.

The proposed upgrades have been designed and sited based on the recommendations provided within these technical assessments, to protect and sustainably manage soil, water, drainage, and ecological processes. Treated effluent will be repurposed to wash down concrete aprons, stockyards and for the initial wash of cattle. Solid waste will be removed and treated offsite by third-party operators and stormwater runoff will be collected by the proposed WWTP (see Section 2.2.4). Remaining solid waste will be dewatered and sent to a composter. No discharge will occur due to risk of soil and groundwater contamination from wastewater treatment substances.

For the existing stages of the abattoir upgrades as discussed in this application, there will be no impacts to flora or fauna species within the area.

As discussed throughout Section 3.2 and 3.3, the proposed works are considered to be consistent with state and local planning policies. The recommencement of abattoir operations will offer a range of employment and economic benefits to the wider East Gippsland community.

4.2 Clause 52.06 – Car Parking

A planning permit is required to reduce the number of car parking spaces required under Clause 52.06-5.

Clause 52.06 requirements

The car parking requirements for the proposed development are set out in Clause 52.06-5 of the planning scheme. Based on the Column A rates, the statutory car parking requirements for the proposed additions are outlined below in Table 5.

Table 5 Clause 52.06 car parking requirements

Use	No/Area	Rate	Car parking requirement	Total
Industry	12,303m^2	2.9	To each 100 sq m of net floor area	356
Total				**356**

Based on the above calculations, a total of 356 car parking spaces are required for the proposed development under Clause 52.06.

This proposal includes the provision of 301 parking spaces therefore requiring a waiver of 55 spaces.

Application requirements

The Car Parking Demand Assessment has been prepared and can be found in Section 4 of the Traffic Impact Assessment at Appendix A.

A Car Parking Plan has been prepared that meets the requirements and design standards of Clause 52.06-8, Clause 52.06-9, and Clause 52.06-11.

Decision guidelines

The car parking rates required in the planning scheme are considered excessive when compared to the anticipated staffing numbers required for site operation and the intended land use. As outlined in Section 2.1.2, no more than 111 staff would be onsite at any given time. Assuming every staff member drives to the site, this would generate a demand for 111 spaces. Therefore, the proposal to provide 301 spaces, whilst short of the numerical requirements pursuant to Clause 52.06-5, the provision of 301 spaces significantly exceed the anticipated parking demand and is therefore considered acceptable.

The proposed car parking has been designed to ensure easy and safe vehicle and pedestrian movement across the site. All accessways have been designed with gentle horizontal curves and are more than three metres in width. The lack of dead-end aisles means that all vehicles can circulate in a forward direction, improving line of sight for any passing pedestrians.

The car park is significantly set back from Korumburra-Wonthaggi Road therefore making it unlikely to be visible from this road. Further, its location is a short distance from the main abattoir facility, minimising walking distances for staff members and visitors. There are no nearby dwellings, so the location of the car parking lot is not expected to have any negative impacts to surrounding amenity, including noise disturbances.

Four accessible spaces that have been designed to meet the minimum requirements of the Building Code of Australia (BCA) and other relevant standards have been provided within the proposed car parking lot.

The proposed car park is assessed in detail against the applicable design standards in Section 5 of the Traffic Impact Assessment at Appendix A.

5. Conclusion

This planning permit application has been prepared by GHD on behalf of KGF for:

– Use of land for an abattoir and associated buildings and works in FZ land
– A reduction in the car parking requirement of Clause 52.06 Car Parking

This application supports the proposed recommencement of operations at the existing abattoir facility located at 2140 Korumburra-Wonthaggi Road, Lance Creek 3995. The proposal will support Bass Coast Shire's *Economic Development Strategy* by supporting economic growth and a diversified economy. Overall, the proposal is considered consistent with the provisions of the Bass Coast Planning Scheme as follows:

– The project seeks to recommence an approved land use and relies on existing infrastructure to recommence operations. This achieves efficiency in design and operation and minimises broader impacts to the environmental and landscape values of the region.
– The project will boost the regional economy by attracting new investment, diversifying the local economy, and providing more employment opportunities.
– The proposed design and upgrades have been guided by several technical investigations and impact assessments in consultation with key stakeholders including the EPA, CFA, CMA and Regional Roads Victoria
– A key consideration of the project design has been the avoidance and minimisation of potential environmental, landscape, soil, water, and amenity impacts, whilst ensuring that abattoir operations can recommence as soon as possible.
– The proposal will not impact on any vegetation
– The proposal will not have any detrimental impact on the current or any future development and operation of the transport system.

Overall, we consider the use of land and buildings and works associated with the abattoir to be consistent with the relevant provisions of the Bass Coast Planning Scheme. The project represents an appropriate and consistent development outcome in the context of the subject site and its surroundings.

We respectfully request that timely approval is granted for this permit application so that abattoir operations can recommence by April 2023.

HYDROFLOW
WORRY FREE WATER

H2O MECHANICAL



Abattoir Wastewater Treatment DAF and Associated Equipment

WASTEWATER TREATMENT PLANT PROPOSAL DOCUMENT

Kilcoy Global Foods

Proposal 20221207-CP-1716
Quote Issue Date: 07/12/2022

Table of contents

Clause			Page
1	Functional Description		4
2	Plant and Equipment Inclusions		6
	2.1	Drum Screen	6
	2.2	Red stream screw conveyer	6
	2.3	Sludge cake screw conveyer	7
	2.4	Paunch Screw Conveyer System	7
	2.5	DAF Plant	8
	2.6	Lime Make-up System	9
	2.7	Polymer System x 2 (screw press and DAF)	9
	2.8	Sludge Tank and Paunch Tank	10
	2.9	Screw Press	11
	2.10	Buffer Tanks (2)	11
	2.11	Pumps	12
	2.12	Hydro Flow Dosing and Monitoring Package	14
	2.13	Electrical and Automation	16
	2.14	Civil & Structural	17
3	Provisional Sums		18
	3.1	Equipment Transport.	18
	3.2	Scissor Lift Hire.	18
	3.3	Forklift Hire.	18
	3.4	Crane Hire	18
4	DAF Plant and Equipment Pricing Overview		19
5	Execution of agreement		21
Schedule 1 – Fee and Payment Structure			21
Schedule 2 – PID			24
Schedule 3 – Piping and Fitting inclusions.			25
Schedule 4 – Layout Concept			26

This supply agreement

is made between the following parties:

Name	H2O Mechanical
Short Name	Supplier
ABN / ACN	53649593760
Notice details	Chris Pearson, chris@h2omechanical.com.au

Name	
Short Name	
ABN / ACN	
Notice details	

RECITAL

Customer agrees to acquire, and the Supplier agrees to provide, the Goods and/or Services on the terms and conditions set out in this agreement.

THE PARTIES AGREE in consideration of the mutual promises contained in this agreement, and the accompanying general terms and conditions document.

1 Functional Description

The system quoted encompasses 1 x SS304 5mm plate-built DAF with full length skimmer system, 304SS chain and nylon rollers. Dual feed pumps are included with a single sludge pump and recirculation pump for saturated air. The peak flow of the systems is 100m3 per hour at up to 3500 mg/l SS.

2 x buffer tanks are included, both 304 Stainless steel. Each holds 95KL with a recirculation pump fitted to maintain suspension of solids and bone dust in the tanks. An option to fit 1 initially was discussed, however there are possible access issues to install a second tank at a later date, and access to the top of the initial tank will require additional platforms which will be obsolete once the second is fitted.

The buffer tanks are fed from the pit below a red stream drum screen. This pit is also the destination of the screened red stream pumps, and the filtrate removed from the paunch, and the sludge.

A rotating internally fed 40 x 72 inch drum screen with 1.0 mesh is used to screen the red stream before entering this pit, with 2.8 m high platform (footprint

to be determined after buffer tank position is confirmed). The screenings will run via a horizontal auger into the offal auger as requested.

A polymer makeup system is included for treatment of the DAF water, with polymer dosing pump. A second unit is used for the screw press to enable opposite charge polymers to be used for dewatering of sludge.

Hydro Flow dosing system package is providing monitoring/controlling for inlet and outlet pH, with chemical adjustment on both, chemical storage solutions and full installation. A coagulant system has been added to produce optimal BOD removal for water reuse/irrigation purposes. A lime mixing and dosing system has also been included for pH correction and buffering of lagoon water, this replaces traditional caustic dosing and adds no sodium to the water used for irrigation.

The control system is a customised 7" Allen Bradley HMI with modem for remote alarming. The PLC has adequate I/O capacity for some further expansion if required and includes local isolator feedback for all main motors and equipment.

pH is monitored in 2 places, the incoming pre-reaction tank on the DAF, and the final water discharge tank where lime is added to raise the pH going to the lagoons. TSS is also monitored on the outlet to provide the user with alarms alerting them to dirty water in the DAF indicating an issue with chemistry or other critical point in the process.

The chemistry supplied by Hydro Flow Pty Ltd is GRAS rated, with certificates provided for the products.

Solids handling includes 2 x 8000 litre 5mm plate 304 Stainless steel tanks, each with a mechanical mixer for the paunch DAF sludge. The paunch system including the header tank, fan press and auger with 5 x automated pneumatic rams is supplied by the customer and installed by H2O Mechanical as part of the price. The supporting frame/structure and associated controls for distribution to the truck, including pumps and piping/overflow is also included.

Once the project is signed off, drawings will be provided of all structural components for signing, which will initiate construction of each.

2 Plant and Equipment Inclusions

2.1 Drum Screen

RED STREAM DRUM SCREEN:
Model: H2O-IDS120/180-1.0 (46 x 72 inch)
Power: 0.75kw Nord drive motor, 415 3Ø,
Mesh size: 1.0mm or 2.0 mm 304SS
Body: 304 SS
Flow Capacity: 190 m3/hr nominal flow (4.5ML per day)
Design loading SS: 2500 - 5000 mg/L (particle size dependant)
Design Temperature: 55 °C

Installation Notes:

- Includes installation, crane and scissor lift allowed for in provisional sums..
- Installation allows for mounting each on a 3.8m x 3.0m platform or as determined after installation of buffer tanks (included), raised 2.8m galvanized structure with ladder/hoop, rail and kick rail, gal-mesh or tread mesh floor.
- Installation of concrete pad and engineering by others, screening to auger below.
- Requires warm/hot high pressure 3.5 Bar water auto wash, currently hot water/pump system is excluded. (control cabinet has power for wash booster pump)
- Isolator and Estop on platform included.

2.2 Red stream screw conveyer

Auger: 6.5m
Power: 1.1kw Nord drive motor, 415 3Ø,
Auger Size: 320mm
Body: 304 SS
Discharge Height: 2m.

Installation Notes:

- Includes installation, crane and scissor lift allowed for in provisional sums.
- Supported from drum screen frame, through wall to offal auger.
- Isolator at motor, powered from MCC.

- Modification of shed wall to accommodate auger housing.

2.3 Sludge cake screw conveyer

Auger: 2.5m

Power: 1.1kw Nord drive motor, 415 3Ø,

Auger Size: 320mm

Body: 304 SS

Discharge Height: into paunch auger. (adequate length of paunch auger to be provided by person(s) ordering/supplying paunch auger)

Installation Notes:

- Includes installation, crane and scissor lift allowed for in provisional sums.
- Supported on screw press frame under screw press outlets, protective mesh guard on top.
- Isolator at motor, powered by screw press control cabinet.
- Auger to discharge to paunch auger.

2.4 Paunch Screw Conveyer System

Model: **Provided by Customer:**

- Fan press x 1, (space left for second on platform),
- Header tank with inlet(s), outlets and overflow. (request table D/E flanges where possible)
- Auger with 5 x outlets, sized to allow screw press material to enter also,
- pneumatic gates/slides with air line fittings.
- Drive motor for auger,
- Auger and fan press drawings prior to supporting frame construction (required by mid December)
- Safety guards where required.
- Specific manufacturer installation instructions where applicable.

Installation Notes (By H2O Mechanical):

- Provide and install Fan press/Screw press platform, with stairs, rails, gal mesh or tread mesh floor, lighting, control cabinet etc.
- Frame to be UB or UC, galvanised (or as required by engineer), with bracing, chem set foot plates, with structural grout fill, sized for easy access by trailer.
- 5 x level sensors provided for automation of outlet gates to be provided and

connected as part of installation to control auger outlets.

- Isolator at auger and fan press, provision of second fan press motor.
- Power and control from Screw Press stand Control Cabinet.
- Air supply by others (no compressed air allowed for)

2.5 DAF Plant

Model: H2O-DAF-100 PLANT

Power: 415 3Ø

- Recycle pump 11 KW
- Skimmer 0.2 KW
- Mixers x 2 1.5 KW
- Final tank mixer 1.1 KW

Scraper system: 304 SS chain, VSD controlled, 6 paddles

Body: 304 SS 5mm plate,

Flow Capacity: Nominal 100m3/hr

Design loading SS: 1000 - 3500 mg/L

BOD/COD removal: 75% % (Forecasted estimation based on similar samples)

Suspended Solids removal: 80 – 90 % (based on similar samples)

Nitrogen removal: 40 – 70 % (based on similar samples)

Design Temperature: nominal 40 °C (Peak 55 °C)

Walkway: Painted Mild Steel full length walkway, fibreglass tread mesh, safety rail and kick rail, check plate stairs with rail.

Dissolved Air: Air dissolving tank, automated air flow control system, CNP centrifugal recirc pump and valving, 304SS pressure piping.

Base: Conical sectional base, >45° pitch for drainage.

Installation Details:

- Includes installation of unit, crane and scissor lift as allowed for in provisional sums,
- Deconstruction of buildings/structures required for access to installation site, and associated equipment hire is excluded from the price.
- Full length walkway, rail and stairs installed on DAF,
- All analytical probe/instrument holders installed on DAF, (pH and TSS/NTU)
- Safety guards on skimmer system installed.
- Lanyard E-stop on walkway side,
- Full length mesh guards for skimmer and motor/drive chain sections.
- DAF comes with full length 300mm cable tray on one side, motor isolation plates and conduit to mixer and scraper motors and equipment.
- Drain line from base fitted and connection to sludge pump for removal of settled

material to sludge or by drain to waste. (Conical base sections as per request included)

- Installation of recirc pump, SS304 recirc lines, dissolved air tank and associated equipment included. (see sludge system for details on sludge removal pump)
- Sum excludes rails installed to support DAF if concrete base is not flat, does not allow for engineering calculations on concrete for load bearing and the responsibility to establish a suitable site for installation is incumbent on the customer. (unit approx. 60,000 kg in operation including final water and lime tanks)
- Requires warm/hot high pressure (>1.0 Bar) water for probe wash system and wash water – provided by others, pressure pump optional extra if required.
- All flanges table D or E.
- All electrical terminations included including motor isolators fitted (see electrical and automation for details).

2.6 Lime Make-up System

Model: Urban Poly 2150 litre squat poly tank, with ST-10 mixer and support

Powder Hopper Size: Manual batching required approximately weekly, (100kg lime per 2000 litres)

Power: 1.1kw mixer

System Design Capacity: 2000 Litre batches, approx. 20 - 30 kg of hydrated lime per day (estimation only, varies with water quality and pH at DAF discharge)

Installation Details:

- Isolator fitted to mixer
- Power from main cabinet
- Lime pump included in dosing package, controlled from MCC.
- Requires concrete base for installation. Concrete by others.
- Stainless manual hopper installed for addition of lime bags to tank. (manual batch)

2.7 Polymer System x 2 (screw press and DAF)

Model: H2O-PPU-500-55

Powder Hopper Size: 55 kg

Power (per unit): 2 x 0.55kw mixers, 1 x 0.2kw auger, 1 x 0.55kw polymer pump

System Flow Capacity: 500 L/hr

Installation Details:

- Fully installed, requires constant pressure continual cold water supply. If plant supply varies in flow and pressure a tank and pump will be required (currently excluded from price).
- Individual cabinet and PLC on each unit.
- Suction line to polymer pump in Schedule 80 pipe up to 15 m,
- Water line connection in PVC or stainless steel up to 15 m.

2.8 Sludge Tank and Paunch Tank

2 units to be installed, 1 for paunch, 1 for sludge.

Tank Model: H2O Custom 8000 litre 304 Stainless steel

Mixer: 5.5kw Nord drive motor, 415 3Ø, 2 x foil sets, 300 mm foils. 304 SS shaft and foils.

Tank level sensor: VEGAPULS 11 4X

Power: 5.5 kw mixer each 415 3Ø (level sensing equipment 24v supply from main cabinet)

Tank Materials: 5mm 304 SS, 6 legs, conical base. Height 3200mm. Access platform to top access hatch with ladder, hoop and rails.

Sludge System Design Flow Capacity: 6m3 per hour.

Fan press system design flow to be confirmed by others.

Installation Details:

- Fully installed, requires concrete pad by others. Tanks on 6 legs, 11,600kg in operation each
- All pipe bracing and bracketing included, underground or raised piping for vehicle/pedestrian access currently excluded.
- Mixer installation to top of tank, manway access hatch in top of tank.
- Tank overflows to ground.
- Isolators at mixer motors.
- Crane for installation included in provisional sums.

2.9 Screw Press

Model: H2O-MDSP-350-3

Auger Size: 3 x 350mm

Power: 415 3Ø 3 x drive motors 1.1 KW each, 1 x mixer motor 0.75 KW.

System Wet Sludge Flow Capacity: 60 kl Per day @ 6-8% solids, 80kl per day @ 3-5% solids (approximate only)

Installation Details:

- Installation on frame to be attached to paunch dewatering system. Approximate platform size 5000 x 3000 x 3400. Vehicle access below. (TBC upon finalization of site layout)
- Filtrate line plumbed to common filtrate line with paunch dewatering system.
- All pipe bracing and bracketing included, underground or raised piping for vehicle/pedestrian access currently excluded.
- Includes independent control cabinet, Connection of all motors with isolation switches included and connection of supply from MCC included.
- Concrete slab and access preparation by others, engineering of slab for suitability to support system is the responsibility of the client.

2.10 Buffer Tanks x 2

Model: NA – 95 KL 304 stainless steel tank,

Size: 4200 x 6800 approx, TBC by manufacturer (diameter will be 4200mm)

Power: NA

See details previously provide by email.

Installation Details:

- Includes delivery to site and positioning as per agreed site layout, provisional sum provided for transport and crane.
- Customer to ascertain load bearing capacity of concrete for installation, weight in use approx. 108,000 kg.

2.11 Pumps

(note, pipe fittings used only for head estimations, see appendix for piping allowances)

	PUMP NAME	Model	Required flow L/sec	Pipe run meters	Pipe material	DN	No. of elbows	Est head	Suction	Motor Kw	Running Amps	VSD
1	Green pit trash pump-Duty	Suoto ST-4	12	140	316SS	100	12	12-15m	Open Pit, 2m deep	7.5	13.6	N
2	Green pit trash pump-Standby		12	140	316SS	100	12	12-15m	Open Pit, 2m deep	7.5	13.6	N
3	Red Pit (kill/boning) trash pump - Duty	Suoto ST-4	12	40	316 SS	100	8	10-12m	Open Pit, 2m deep	5.5	10.2	N
4	Red Pit (kill/boning) trash pump - Duty		12	40	316 SS	100	8	10-12m	Open Pit, 2m deep	5.5	10.2	N
5	Screen pit Trash pump - Duty	Suoto ST-4	30	12	316SS	150	6	8-10m	Open Pit, 2m deep	11	20.7	N
6	Screen pit Trash pump - Standby		30	12	316SS	150	6	8-10m	Open Pit, 2m deep	11	20.7	N
7	Paunch fan press supply pump - Duty	Salvatore Robuschi RCL 50-20C 4B30 U182 S	12	15	316SS	100	8	8-10m	2m Flooded	3	5.88	Y
8	Paunch fan press supply pump – S'by		12	15	316SS	100	8	8-10m	2m Flooded	3	5.88	Y
9	DAF feed pump 100m3 - Duty	Salvatore Robuschi RCL 80-20B 4B55 U181 S	28	6	316SS	200	6	3-5m	3-4m flooded	5.5	10.2	Y
10	DAF feed pump 100m3 - Duty		28	6	316SS	200	6	3-5m	3-4m flooded	5.5	10.2	Y
11	Chlorine Dioxide reuse transfer pump	Southern cross CBI 4 – 50T	2.5	45	Rural Poly	50	6	20	Flooded (final water tank)	1.11	2.5	N

Pumps continued

	PUMP NAME	Model	Required flow L/sec	Pipe run meters	Pipe material	DN	No. of elbows	Est head	Suction	Motor Kw	Running Amps	VSD
12	DAF discharge Pump – Duty	Salvatore Robuschi RGL 65-20B 0000 M181 3	30	120	Poly or PVC	150	6	20-30m	Flooded	22	38.3	Y
13	DAF Discharge pump – Standby		30	120	Poly or PVC	150	6	20-30m	Flooded	22	38.3	Y
14	Buffer tank recirculation pump	Salvatore Robuschi RCL 50-25A 6B30 U181 S	5	8	316SS	50	4	6-8m	Flooded	2.2	5.2	N
15	Sludge Pump (DAF)	Netzsch NM045BY01L06B (mono style)	6m3/hr	15	316SS	63	6	NA	Flooded	4	7.8	N
16	Sludge Pump (Screw Press)	Netzsch NM045BY01L06B (mono style)	6m3/hr	15	316SS	63	6	NA	Flooded	4	7.8	Y
17	Chlorine dioxide discharge pump (chlorinated water) Duty Pump	Pentair intellomaster 2.2	5.8 combined	80	Poly	50	NA	12-15m	Flooded	2.2 (1Ø)	10.8	N
18	Chlorine dioxide discharge pump (chlorinated water) Assist Pump	Pentair intellomaster 2.2		80	Poly	50	NA	12-15m	Flooded	2.2 (1Ø)	10.8	N
19	DAF recycle pump	CNP centrifugal TBA	10	NA	316 SS	63	NA	NA	Flooded	11	TBC	N
20	Polymer Dosing pump (DAF)	TapFlo PTL45N-43P220-EPDM + SK772.1F-90LP/4 TF	100 – 800 L/hr	NA	PVC	20	NA	NA	Flooded	0.55	TBC	Y
21	Polymer Dosing pump (screw press)	TapFlo PTL45N-43P220-EPDM + SK772.1F-90LP/4 TF	100 – 800 L/hr	NA	PVC	20	NA	NA	Flooded	0.55	TBC	Y
22	Chlorine dioxide storage tank recirc/dosing manifold	Southern cross CBI 4 – 50T	2.5	45	PVC	50	6	20	Flooded (yard water tank near green pit)	1.11	2.5	N

Pump Installation Details:

- All pumps supplied with ball valves on delivery, and on suction where under suction head (table D or E or ANSI Ball valve, SS bolts and washers, nitrile gaskets, bellows and wafer or swing check valves where required),
- All inlet and outlet manifolds in SS 316 tube excluding dosing, yard wash and sludge pumps.
- Individual isolation switches on each pump.
- Matalec pump control boxes used for Red, Green, and screened pump pits.
- Vegapuls 11 4x compact radar or similar used for pump level controls in pits and tanks.(model to be confirmed with customer when ordering)
- Radar controlled duty standby setup on all critical pump systems.
- Check valves included on all pumps where required.
- All pump sets skid mounted on PFC galvanised rails with foot mounts, isolator mounts and control box mounts where required.
- 316 SS tube suction and delivery piping on all waste water pumps.
- Pump materials a combination of cast and stainless steel wetted parts.

2.12 Hydro Flow Dosing and Monitoring Package

pH Control System:

- 2 x Prominent single channel compact Ducotest pH controllers – Model: DCCaW006PR0010EN
- 4 x Broadly James pH probes – ¾ BSPT 10m leads. (2 spare)
- 1 x Pre DAF Acid pump Prominent GammaX Model: DFXa0530EUSPTR0000UC0130EN01EN, 49 L/hr, 4 Bar pressure, Suited up to 73% H_2SO_4, full installation included.
- Post DAF lime dosing pump Model: Prominent Dulco Flex Model: DFBa010A100A0000001 (VFD controlled, on/off with flow), Full installation included.

Coagulant Dosing System:

- Coagulant Pump Prominent GammaX Model: DFXa0530EUSPTR0000UC0130EN01EN
- Dosing control on main HMI (variable speed via analogue output, on/off with flow)

TSS monitoring package:

- ABB TSS monitoring system including analyser, multifunctional probe for measurement of TSS/NTU
- Feedback to main control system, optional dosing adjustment based on water clarity,
- Dirty water alarm through email/text,
- Automated probe cleaning system.
- Probe mount system installed.

Yard wash chlorine dioxide dosing system:

- Recycled water holding tank 25,000 litres, (located near green pit)
- Wash down water pump set, Duty assist multistage Pentair Intellomaster
- Prominent chlorine dioxide system, 600 gram per hour injection system including:
    - Analyser, (maintain free chlorine level of >1ppm)
    - Reaction Tank,
    - Static mixer
    - Leak detection automatic cutoff,
    - Back pressure valve,
    - Mag flow meter and chemical tanks.
    - Vega level radar in tank, auto transfer system from final water tank in DAF.
    - If above water is not available, at a critical low level the chlorine dioxide tank will introduce town water instead to maintain steady supply for yard wash.

Chemical Storage:

- Sulphuric Acid 2000 litre self-bunded poly tank. Pricing allows for storage tank to be located up to12m from DAF MCC and dosing point.
- Lime mixing tank: Polymaster 2150 litre squat urban poly tank. (un-bunded)
- Lime mixer 3 phase high speed agitator, flange mounted to poly tank.
- Coagulant Single IBC bund or gal IBC stand included. (dose from IBC)
- Chlorite for chlorine dioxide, 1500 or 2300 self bunded poly tank. Pricing allows for storage tank to be located up to12m from DAF MCC and dosing point.
- Acid for chlorine dioxide, 1500 or 2300 self bunded poly tank. Pricing allows for storage tank to be located up to12m from DAF MCC and dosing point.

Installation Details:

- All dosing pumps installed on PVC, PE, or Galvanised bracket
- Pricing allows for all dosing pumps to be installed within 3m of chemical storage to minimise suction blockages.
- Maximum distance for dosing pumps from DAF main control cabinet is 15m (cable length).

- pH dosing measured values linked and trended on main control HMI.
- All foot valves, dosing lines, bracketing, injection points and conduit included in pricing
- Chemical storage systems require concrete area prepared by customer, flat, concrete preferred and accessible by forklift and/or delivery truck.
- 1500 and 2300 litre storage tanks can be filled via pump from Hydro Flow vehicle from up to 10m safely (area exclusion for acids required during transfers)
- All tanks monitored using level radar, vegapuls or similar vega product as required.

2.13 Electrical and Automation

Main Control Cabinet(s):

- Rittal Stainless Steel Outdoor cabinet, 2 cabinets, 800w x 2000h x 600 deep, ventilated with HMI in front.
- Allan Bradley PLC, 7" HMI, Additional module for future expansion, includes mirroring of polymer system, screw/paunch auger, pump control HMI's.
- Motor isolator feedback to PLC on main pumps and motors.
- Termination of main power feed cables into DAF MCC cabinet by others; 3 phase, neutral and earth. (unless otherwise arranged)
- Screw press control board with 5" HMI and PLC located on screw press/paunch platform, controls sludge and paunch tank level and pumps, mixers, paunch and screw press distribution to truck, supply connection from MCC included.
- Polymer units individual control boards, with 5" HMI and PLC located on each unit, supply connection from MCC included.
- Schneider electrical switching gear and overloads/motor protection on all pumps and motors provided,
- Schneider VSD where required, (Other models to be supplied by customer prior to sign off if others preferred)
- Ventilated cabinet, automated internal power lamp and alarm buzzer,

Motor terminations

- VSD cable installed to all variable speed motors,
- Flex installed to all other motors, (Feed pump connection pricing excluded until layout confirmed)
- Local isolators installed to all motors/pumps.
- E-stop on required equipment
- Isolator feedback to PLC on major motors.

Cable Tray/Conduit

- All cables on/in Gal Cable tray, PVC conduit or PVC rhino-flex conduits as required.
- Price allows for cable tray and conduit attached to DAF, walls or floor, using up to 600mm

cantilever Unistrut brackets,

- Suspended or elevated conduits and cable tray at additional costs.
- 150mm or 300mm galvanized cable trays included as standard, with galvanised cover where sun and UV will be an issue, other sizes or materials at the agreement of both parties, additional costs may apply.

General and Safety

- All installations by qualified electrician,
- Estop on main cabinet face, isolators within reach of each motor,
- Schneider contactors/motor overload.
- Safety switch to all GPO's where installed,
- All leads tested and tagged, all plug in devices tested and tagged prior to commissioning,
- Electrical LOTO system in place during construction.
- Lighting provided:
    - Flood from buffer tank,
    - Flood x 2 on screw press frame,
    - Fluro @ MCC location,
    - Fluro @ polymer unit location
    - PE cell for lighting control.

Monitoring and automation,

- DAF critical shut down alarms such as motor fail, low polymer level, sludge level high, system faults, and automated stop and start based on balance tank level.
- Modem fitted for email alarming to customer and service provider(s), and on line PLC servicing and programming services.
- pH and NTU/SS (where fitted) alarming and shut down for performance monitoring.
- Critical alarm points for chlorine dioxide failure or major fault as per inclusions listed.
- Remote setting adjustments and system control via Hydro Flow server.

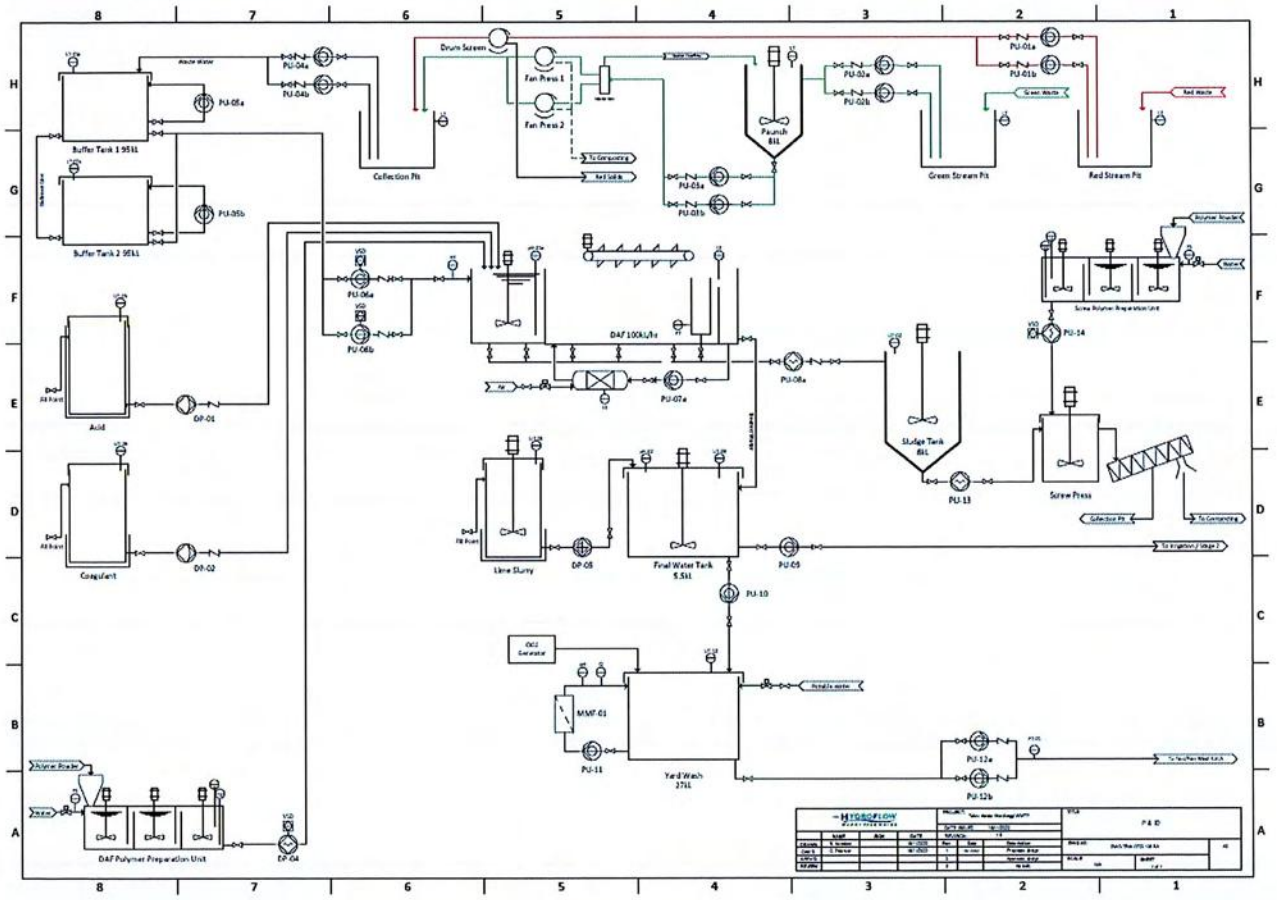
2.14 Civil & Structural

No civil or structural services other than equipment stands as specified, items can be added at the agreement of both parties as required and at the appropriate fee.

If the DAF location chosen is not on a flat surface, i.e., a slab or laser levelled structural sub frame, or surface that cannot support the necessary weight, an adequate structure will need to be installed at an additional cost.

Engineering drawings for manufactured structures at request of customer included. Must be requested prior to placing deposit for order.

Schedule 2 – SYSTEM PID



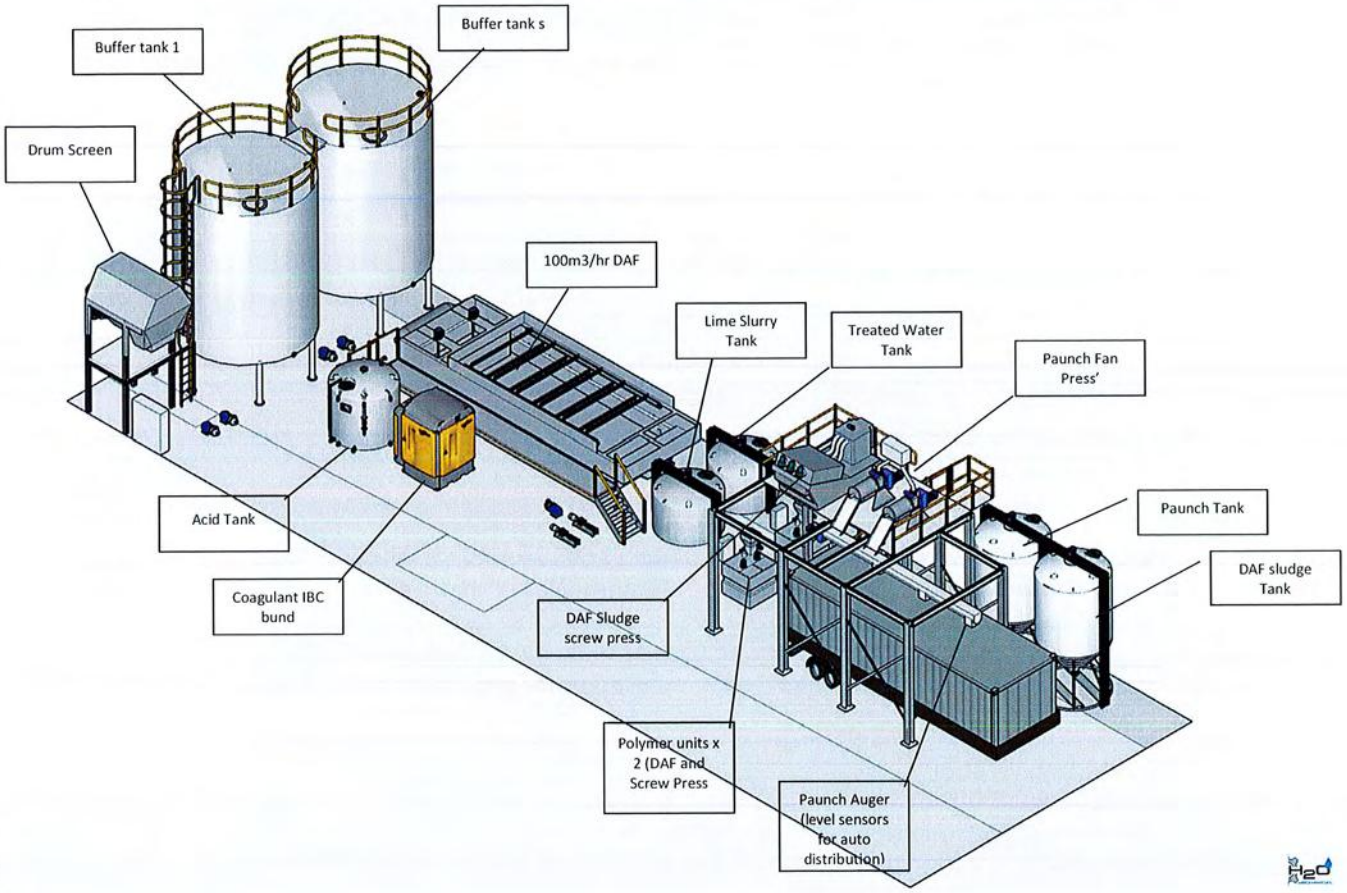
Schedule 3 – Stainless Piping Allowances:

Below outlines pipe sizes and allowances for fittings and inspection points.

Joins to pump manifolds, tanks etc are by flange which are included but not listed below.

Pipe Run	MODEL/MAKE
Paunch pit to paunch tank	SS 316 100mm, 140m, 12 Elbows, 2xtee with BSM inspection, partially overhead + off fence
Paunch tank to header tank	SS 316 100mm 18m, 10 elbows, 1 tee with BSM inspection, up onto paunch platform header
Paunch and screw press filtrate/overflow back to screen pit	SS 316 150mm, graded 50m, 12 elbows, 2 x tee, 1 x BSM inspection, combine overflow/filtrate lines from paunch stand.
Red pit to screen	SS 316 100mm 40m, 10 elbows, 1 tee with BSM inspection
Screen pit to buffer tank	SS 316 150mm, 12m, 6 elbows (combined green and red water into buffer)
DAF feed pump to DAF inlet	SS316 200mm, 10m, 4 elbows, (200mm flange on daf x 2
DAF outlet to tank	SS316 200mm, (2 lines out of DAF) 2 x 200mm flanges, 2 x 200mm elbows, 6m pipe
Buffer recirc pump	SS 316 63mm, 12m, 12 elbows, 2 tee, (mixes the buffer tank)
Sludge outlet from DAF to tank, (flange in pump)	SS 316 65mm, 18m, 10 elbows, 2 tees with 25mm valves for jetting,
Sludge Tank to screw press.	SS316 63mm, 18m , 4 x flanges, 2x tee with socket for jetting,
Discharge from clean water tank to pumps (discharge line from pumps to ponds by others)	SS316 200mm 6m, 4 elbows, 2 x 25mm socket, pressure and sample pts
Screw Press filtrate to filtrate line	SS316 100mm, 15m, 8 elbows, 1 Tee, 1 bsm, 2 flanges,
Potable Water line allowance	50m 20mm 304 SS, 12 fittings, taps and 2 hoses, water supply connection by others.
Paunch header overflow PVC	Overflow to paunch tank 100mm pressure PVC
Additional bracing/posts	Various, included as needed

Schedule 4 – Layout Concept (illustration for general layout purposes only, some items may not be accurately represented)



END OF DOCUMENT