Meander Valley Council
Working Together

PLANNING NOTICE

An application has been received for a Permit under s.57 of the Land Use Planning Approvals Act 1993:

APPLICANT:	**RMCG - PA\26\0105**
PROPERTY ADDRESS:	**222 - 250 Weetah Road DELORAINE (CT: 175674/1)**
DEVELOPMENT:	**Resource development (biosolids spreading) – waterway, attenuated activity.**

The application can be inspected until **Tuesday, 18 November 2025**, at www.meander.tas.gov.au or at the Council Office, 26 Lyall Street, Westbury (during normal office hours).

Written representations may be made during this time addressed to the General Manager, PO Box 102, Westbury 7303, or by email to planning@mvc.tas.gov.au. Please include a contact phone number. Please note any representations lodged will be available for public viewing.

If you have any questions about this application please do not hesitate to contact Council's Planning Department on 6393 5320.

Dated at Westbury on 1 November 2025.

Jonathan Harmey
GENERAL MANAGER

APPLICATION FORM

PLANNING PERMIT

Land Use Planning and Approvals Act 1993

Meander Valley Council
Working Together

- Application form & details MUST be completed **IN FULL**.
- Incomplete forms will not be accepted and may delay processing and issue of any Permits.

OFFICE USE ONLY

Property No:		**Assessment No:**	- -
DA		**PA**	**PC**

- Is your application the result of an illegal building work? ☐ Yes ☑ No (Indicate by ✓ box)
- Have you already received a Planning Review for this proposal? ☑ Yes ☐ No
- Is a new vehicle access or crossover required? ☐ Yes ☑ No

PROPERTY DETAILS:

Address: 222-250 Weetah Rd — Certificate of Title: 175674/1

Suburb: Deloraine 7301 — Lot No:

Land area: 409.3ha m^2 / ha

Present use of land/building: Agricultural Use *(vacant, residential, rural, industrial, commercial or forestry)*

- Does the application involve Crown Land or Private access via a Crown Access Licence: ☐ Yes ☑ No
- Heritage Listed Property: ☐ Yes ☑ No

DETAILS OF USE OR DEVELOPMENT:

Indicate by ✓ box

☐ Building work ☐ Change of use ☐ Subdivision ☐ Demolition
☐ Forestry ☑ Other

Total cost of development *(inclusive of GST):* $ NA — *Includes total cost of building work, landscaping, road works and infrastructure*

Description of work: Application of biosolids to land for beneficial reuse. See Biosolids Management Plan for full details.

Use of building: NA (main use of proposed building – dwelling, garage, farm building, factory, office, shop)

New floor area: NA — New building height: NA

Materials: External walls: NA — Colour:

Roof cladding: NA — Colour:

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
175674	1
EDITION	DATE OF ISSUE
2	17-Aug-2020

SEARCH DATE : 29-Oct-2025
SEARCH TIME : 02.24 PM

DESCRIPTION OF LAND

Parish of MALLING Land District of DEVON
Lot 1 on Sealed Plan 175674
Derivation : Part of 1604 Acres Gtd. to Sarah Munce, Sarah Maria Munce, Elizabeth Mary Munce & Robert Hall Munce, Whole of Lot 1000 (7021m2) The Crown (SP171453) and Part of Lot 993, 640 Acres Gtd. to Henry Edgecumbe
Prior CTs 171453/1 and 171873/1

SCHEDULE 1

C993720, M596437, M725746 & M825901 THE K.W. HUETT CORPORATION PTY LTD Registered 17-Aug-2020 at 12.02 PM

SCHEDULE 2

M596435 & M596437 Land is limited in depth to 15 metres, excludes minerals and is subject to reservations relating to drains sewers and waterways in favour of the Crown
SP175674 EASEMENTS in Schedule of Easements
E160639 BURDENING EASEMENT: a right of carriageway (appurtenant to folio of the Register Volume 175674 Folio 2) over the land marked Right of Way 10.00 wide XYZ on Sealed Plan 175674 Registered 07-May-2019 at 12.03 PM
M596437 FENCING PROVISION in Transfer
C192990 PRIVATE TIMBER RESERVE pursuant to Section 15(1) of the Forest Practices Act 1985 (burdening part of the said land within described as defined therein) Registered 04-Sep-2001 at noon
E228524 MORTGAGE to Australia and New Zealand Banking Group Limited Registered 17-Aug-2020 at 12.03 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER : STANSHIELD PTY. LTD. &
THE K.W. HUETT CORPORATION PTY. LTD.

FOLIO
REFERENCE : F.R. 171453/1 & 171873/1
WHOLE OF LOT 100, 7021m², THE CROWN (SP171453)
GRANTEE : PART OF1604 ACRES Gtd. TO SARAH MUNCE, SARAH MARIA MUNCE, ELIZABETH MARY MUNCE & ROBERT HALL MUNCE
WHOLE OF LOT 993 640 ACRES Gtd. TO HENRY EDGECUMBE

PLAN OF SURVEY

BY SURVEYOR MARTIN RALPH HEATLEY of
PDA SURVEYORS
3/23 BRISBANE STREET, LAUNCESTON

LOCATION
LAND DISTRICT OF DEVON
PARISH OF MALLING

REGISTERED NUMBER
SP175674

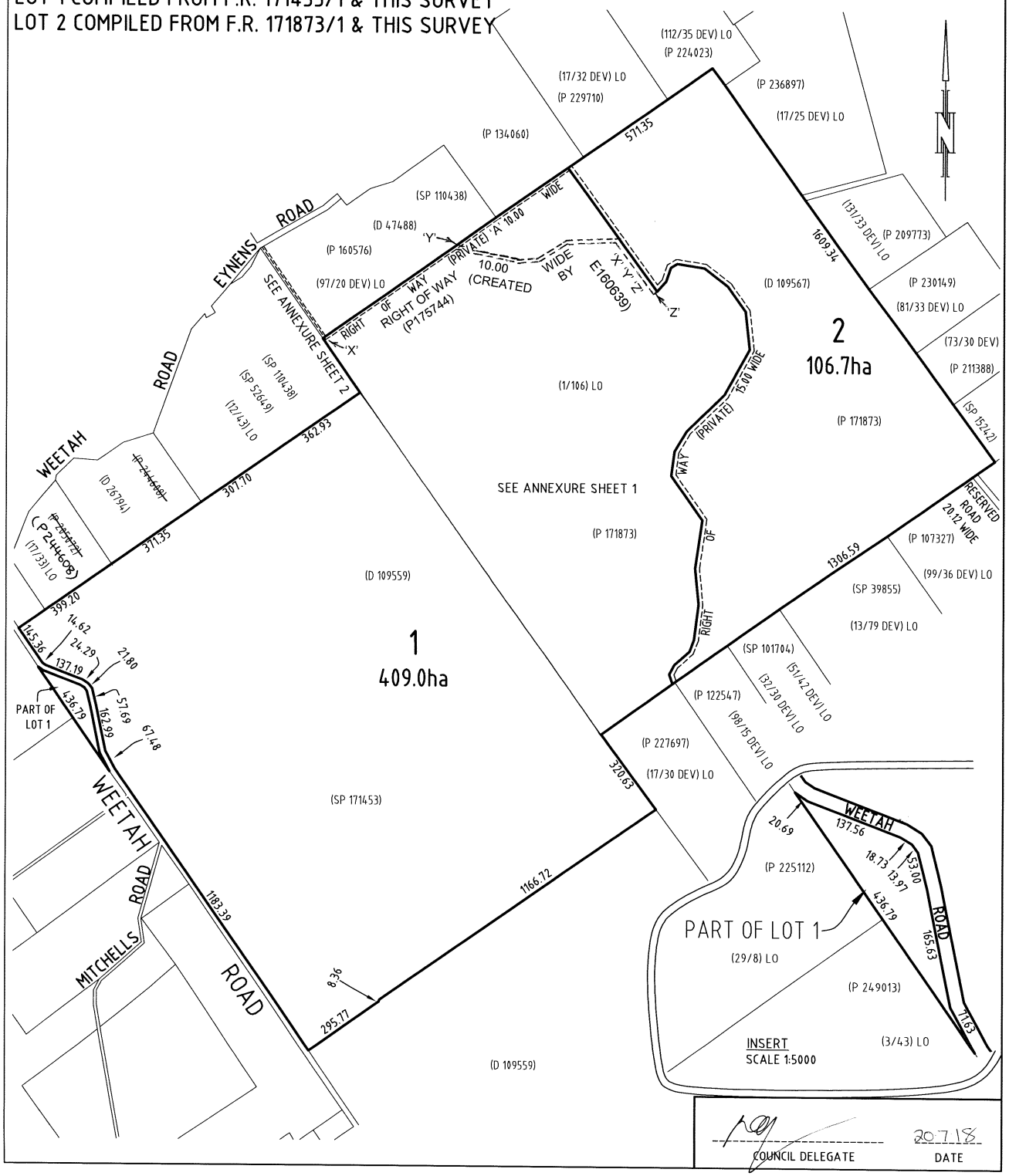
~~APPROVED~~
EFFECTIVE FROM - 7 MAY 2019
Deputy Recorder of Titles

SCALE: 1:12500
LENGTHS IN METRES
SURVEYORS REF: L18028

MAPSHEET MUNICIPAL CODE No. 121 (4640)
LAST UPI No
LAST PLAN No. P171873 SP171453
ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

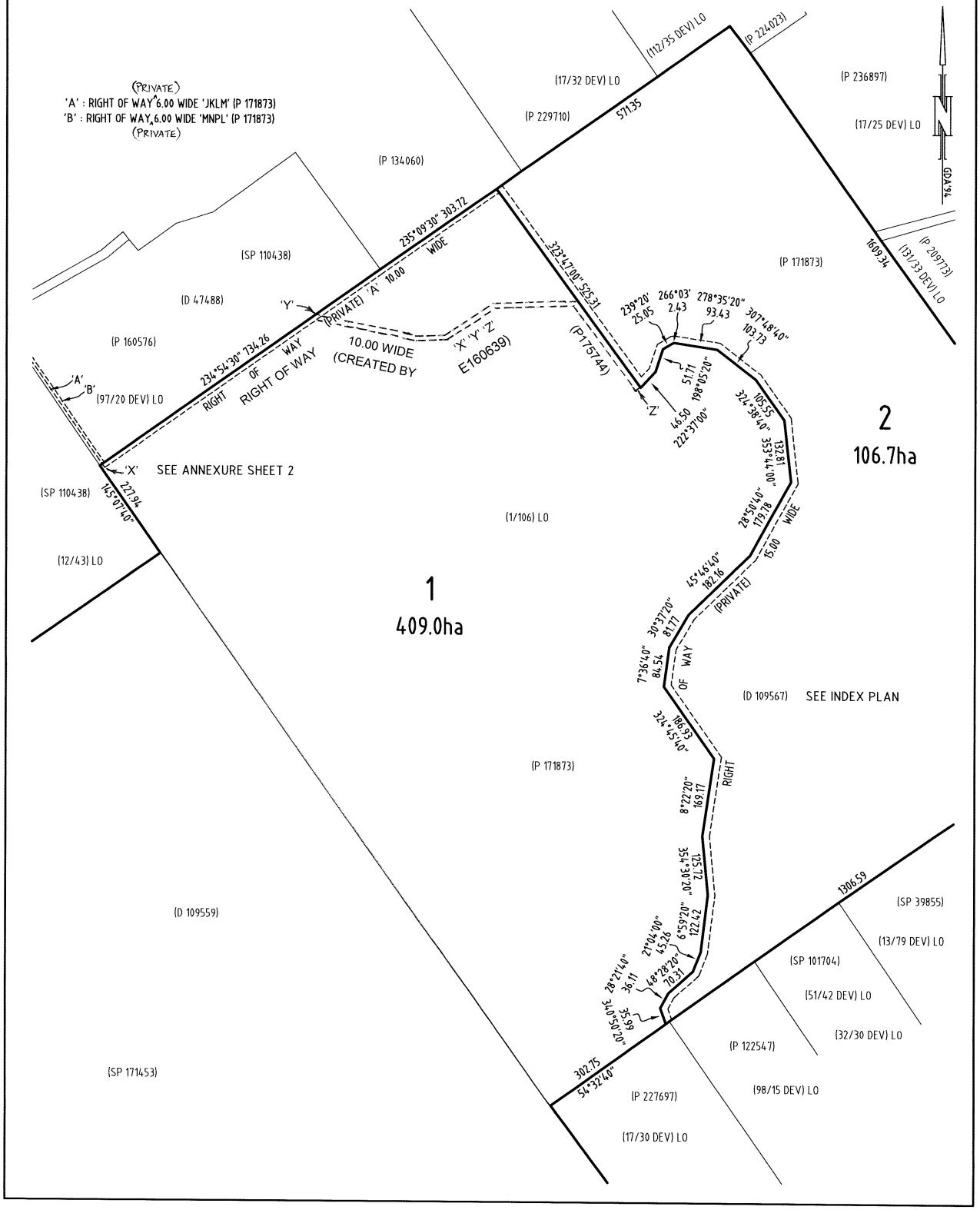
LOT 1 COMPILED FROM F.R. 171453/1 & THIS SURVEY
LOT 2 COMPILED FROM F.R. 171873/1 & THIS SURVEY

INDEX PLAN

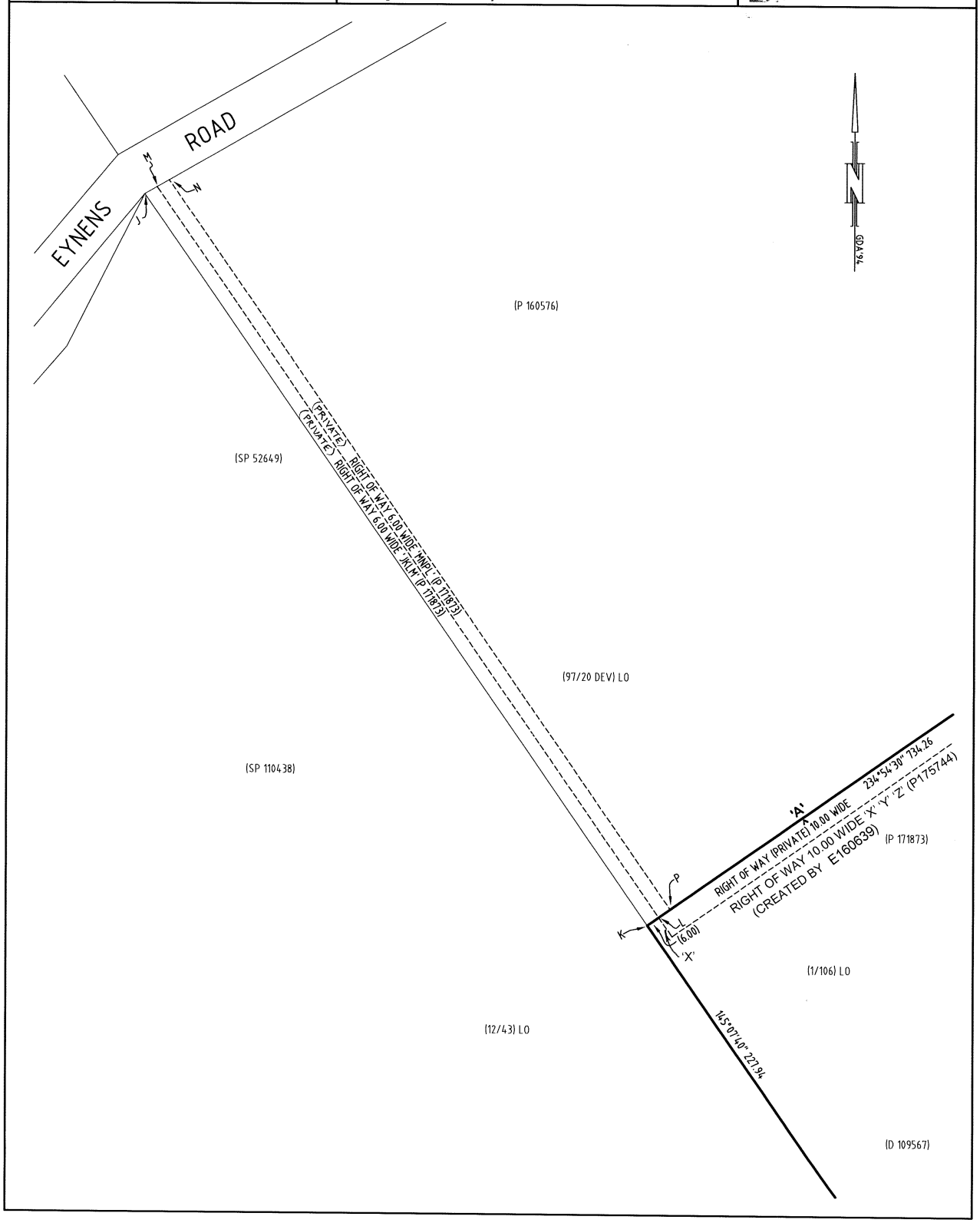


COUNCIL DELEGATE
20/7/18
DATE

PLAN OF SURVEY ANNEXURE SHEET SHEET 1 OF 2 SHEET	OWNER : STANSHIELD PTY. LTD. & THE K.W. HUETT CORPORATION PTY. LTD. FOLIO REFERENCE : F.R. 171453/1 & 171873/1 SCALE 1:7500 LENGTH IN METRES	Registered Number SP 175674
SIGNED FOR IDENTIFICATION PURPOSES Council Delegate 20·7·18 Date	THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN. THE SURVEYORS CERTIFICATE EXTENDS TO THE DETAILS ON THIS SHEET Registered Land Surveyor 11/04/2018 Date	~~APPROVED~~ EFFECTIVE ~~FROM~~ - 7 MAY 2019 ~~Deputy~~ Recorder of Titles



PLAN OF SURVEY ANNEXURE SHEET SHEET 2 OF 2 SHEETS	OWNER : STANSHIELD PTY. LTD. & THE K.W. HUETT CORPORATION PTY. LTD. FOLIO REFERENCE : F.R. 171453/1 & 171873/1 SCALE 1:4000 LENGTH IN METRES	Registered Number SP 175674
SIGNED FOR IDENTIFICATION PURPOSES Council Delegate 20.7.19 Date	THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN. THE SURVEYORS CERTIFICATE EXTENDS TO THE DETAILS ON THIS SHEET Registered Land Surveyor 11/04/2018 Date	~~APPROVED~~ EFFECTIVE ~~FROM~~ - 7 MAY 2019 Deputy Recorder of Titles



SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP 175674

EASEMENTS AND PROFITS

Each lot on the plan is together with:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
(2) any easements or profits a prendre described hereunder.
Each lot on the plan is subject to:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
(2) any easements or profits a prendre described hereunder.
The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

EASEMENTS

That part of Lot 1 formerly comprised in Lot 1 on Plan 171873
~~Lot 1~~ is together with a right of carriageway over the area "'A': Right of Way (Private) 6.00Ø Wide 'JKLM' (P171873)" shown on the plan.

Lot 2 is together with a right of carriageway over the area "'B': Right of Way (Private) 6.00 Wide 'MNPL' (P171873)" shown on the plan.

Lot 1 is together with a right of carriageway over the "Right of Way (Private) 15.00 Wide" as shown on the plan.

Lot 2 is subject to a right of carriageway appurtenant to Lot 1 over the "Right of Way (Private) 15.00 Wide" as shown on the plan.

Lot 1 is subject to a right of carriageway in favour of Lot 2 over the "Right of Way (Private) 'A' 10.00 Wide" as shown on the plan.

Lot 2 is together with a right of carriageway over the "Right of Way (Private) 'A' 10.00 Wide" as shown on the plan.

EXECUTED by **STANSHIELD PTY LTD** as registered proprietor of the property comprised in Folio of the Register Volume 171873 Folio 1 in accordance with Section 127 of the Corporations Act 2001:

.....

(Sole Director/Sole Secretary)

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: Stanshield Pty Ltd and The K.W. Huett Corporation Pty Ltd FOLIO REF: 171873/1 & 171453/1 SOLICITOR & REFERENCE: Rae & Partners – Will Edwards (NAC)	PLAN SEALED BY: Meander Valley Council DATE: 20th July 2018 PA/16/0141 REF NO. Council Delegate
NOTE: The Council Delegate must sign the Certificate for the purposes of identification.	

ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 2 OF 2 PAGES	Registered Number SP 175674
SUBDIVIDER: Stanshield Pty Ltd and The K.W. Huett Corporation Pty Ltd FOLIO REFERENCE: 171873/1 and 171453/1	

EXECUTED by **THE K.W. HUETT CORPORATION PTY LTD** as registered proprietor of the property comprised in Folio of the Register Volume 171453 Folio 1 in accordance with Section 127 of the Corporations Act 2001:

.....
(Director)

.....
(Director/Secretary)

NOTE: Every annexed page must be signed by the parties to the dealing or where the party is a corporate body be signed by the persons who have attested the affixing of the seal of that body to the dealing.

From: "Michael Tempest" <michaelt@rmcg.com.au>
Sent: Thu, 16 Oct 2025 11:22:20 +1100
To: "Planning - Meander Valley Council" <planning@mvc.tas.gov.au>;"Meander Valley Council Email" <mail@mvc.tas.gov.au>
Cc: "Brenton Josey" <brenton.josey@mvc.tas.gov.au>;"French, Darren" <darren.french@taswater.com.au>;"Verdouw, Jeremy" <jeremy.verdouw@taswater.com.au>;"michaeljhuett@gmail.com" <michaeljhuett@gmail.com>
Subject: Planning application - Biosolids land application at 222-250 Weetah Rd
Attachments: Planning-Application-Form_Weetah_Signed.pdf, BMP_Soils_Weetah Rd_20251016.pdf

Hello

Please find attached a planning application form and associated Biosolids Management Plan for the proposed land application of biosolids from for beneficial reuse at 222-250 Weetah Rd, Weetah.

Please contact me if you require any further information. Please send the invoice directly to me.

Kind Regards

Michael Tempest (He / Him)
SENIOR CONSULTANT

RMCG

2nd Floor, 102-104 Cameron Street , Launceston , Tasmania , 7250
0467 452 155 — (03) 6334 1033 — rmcg.com.au — LinkedIn

RMCG

16 OCTOBER 2025

Biosolids Management Plan: Weetah Rd

Final Report

Version 2.0

TasWater

Level 2, 102-104 Cameron St, Launceston Tasmania 7250
rmcg.com.au — ABN 73 613 135 247 — RM Consulting Group Pty Ltd
Victoria — Tasmania — NSW — Queensland

Certified B Corporation

Table of Contents

ACKNOWLEDGEMENT OF COUNTRY

Tasmania is Aboriginal land. We acknowledge the palawa and pakana, the Tasmanian Aboriginal people, as the Traditional Owners and continuing custodians of the lands, seas and waterways of lutruwita, Tasmania on which this project has been conducted. We recognise their continuing connection to land, waters and culture and pay our respects to their Elders past and present, and we acknowledge emerging leaders. Moreover, we express gratitude for the knowledge and insight that Traditional Owners and other Aboriginal and Torres Strait Islander people contribute to our shared work in Australia.

We pay respects to all Aboriginal and Torres Strait Islander communities. We recognise that Australia was founded on the genocide and dispossession of First Nations people and acknowledge that sovereignty was not ceded in this country. We embrace the spirit of reconciliation, working towards self-determination, equity of outcomes, and an equal voice for Australia's First People.

Executive summary

RMCG have been engaged by TasWater to assist them with the development of a Biosolids Management Plan (BMP) to support the beneficial reuse of biosolids at 222-250 Weetah Rd, Deloraine. This BMP assesses and quantifies the biosolids TasWater are proposing to spread on the property. It identifies application rates as well as controls to mitigate potential environmental impacts and impacts on the nearby community. All proposed measures are in line with the requirements of the *Tasmanian Biosolids Reuse Guidelines 2020* (TBRG).

The proposed biosolids are sourced from TasWater's sewage treatment plant (STP) at Deloraine (Lagoon 2). Biosolids from the Deloraine STP, Lagoon 2, will be spread in a sludge form. This is due to lack of an available drying area at the STP for these biosolids. Based on surveys conducted by TasWater, there are approximately 3,600m^3 of biosolids to be removed from Lagoon 2. To determine the appropriate application rates both the Nitrogen Limiting Application Rate (NLAR) and the Contaminant Limiting Application Rate (CLAR) have been calculated as per the TBRG. For the NLAR the identified application rate was calculated at 50% of the identified NLAR.

TasWater have adopted the requirements from the PFAS National Environmental Management Plan (NEMP 3.0) that was released in early 2025. As part of the NEMP 3.0 threshold concentrations for common PFAS chemicals in biosolids and the maximum allowable concentrations in receiving soil have been identified and have been assessed as part of the BMP. Further soils properties (such as phosphorus and salinity) were also considered when determining the application rate for each zone (paddock).

Table ES-1 identifies the zones (paddock) to be utilised for biosolids application, the area available, application rates, total amount of biosolids to be applied and any notes and/or site-specific setbacks. There is sufficient land available to spread all biosolids from Lagoon 2.

Table ES-1: Summary of application rates and available area within identified zones at the property

ZONE	APPLICATION AREA (HA)	APPLICATION RATES (WET T/HA)	TOTAL BIOSOLIDS (T)	NOTES/SETBACKS
13	4.6	200	920	▪ 50 m Dungiven Rivulet ▪ 10 m from drainage line to the south
Stonehouse East	13.7	200	2740	▪ 10 m from drainage line that flows north to south ▪ 10 m from drainage line along eastern boundary ▪ 50 m from property boundary ▪ Avoid wet areas in western corner
Stonehouse North, North	10.9	200	2180	▪ 50 m setback from property boundary ▪ Do not apply on slopes greater than 15%
Stonehouse North, South	13.7	200	2740	▪ 50 m setback from Dungiven Rivulet ▪ 10 m setback from drainage line along eastern boundary
Stonehouse South, East	14.1	200	2820	▪ 50 m setback from property boundary ▪ 10 m setback from all drainage lines ▪ Do not apply on slopes greater than 15%

ZONE	APPLICATION AREA (HA)	APPLICATION RATES (WET T/HA)	TOTAL BIOSOLIDS (T)	NOTES/SETBACKS
Stonehouse South, West	8.6	200	1720	▪ 50 m setback from Dungiven Rivulet ▪ 10 m setback from drainage line along eastern boundary
Total	**72.9**		**13,120**	

Because of the proposed spreading method, i.e. using a liquid with low dry matter, higher application rates than the EPA's Approved Management Method (AMM) for biosolids application are proposed, this means the activity will require a Regulation 21 approval from the EPA Tasmania as well as Council approval. The activity is classed as a Level 1 activity under Environmental Management and Pollution Control Act 1994 (EMPCA).

All spreading activities must comply with the management actions identified in Section 7 of this report. Actions have been identified to manage:

- Odour
- Buffer zones and physical restrictions
- Transport and delivery of biosolids
- Biosolids application method
- Biosolids stockpiling and application controls
- Biosecurity measures including withholding periods for livestock
- Record keeping.

1 Introduction

1.1 OVERVIEW

RMCG have been engaged by TasWater to assist them with the development of a Biosolids Management Plan (BMP) to support the beneficial reuse of biosolids at 222-250 Weetah Rd, Deloraine. This BMP assesses and quantifies the biosolids TasWater are proposing to spread on the property. It identifies application rates as well as controls to mitigate potential environmental impacts and impacts on the nearby community. All proposed measures are in line with the requirements of the *Tasmanian Biosolids Reuse Guidelines 2020* (TBRG).

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TasWater have adopted the requirements from the PFAS National Environmental Management Plan (NEMP 3.0) that was released in early 2025. As part of the NEMP 3.0 threshold concentrations for common PFAS chemicals in biosolids and the maximum allowable concentrations in receiving soil have been identified and have been assessed as part of the BMP.

To determine the appropriate application rates both the Nitrogen Limiting Application Rate (NLAR) and the Contaminant Limiting Application Rate (CLAR) have been calculated. For the NLAR, the identified application rate will be no more than 50% of the identified NLAR. Application of biosolids must comply with Sections 10, 11, & 12 of the TBRG. Furthermore, application rates must align with the requirements set out in Support Document 1 of the NEMP 3.0.

2 Property details

2.1 OVERVIEW

The property at 222-250 Weetah Rd is located to the north of Deloraine, on the northern side of the Bass Highway. The property is within Meander Valley Council's municipal area. The property a is zoned Agriculture under the Tasmanian Planning Scheme – Meander Valley (the Planning Scheme).

The Weetah Rd property has a total area of approximately 2,696 ha. The property is managed as a mixed cropping and grazing enterprise. Biosolids are only proposed to be spread on areas that are managed as pasture and have not received biosolids within the last three years. In total, there are seven titles associated with the property, however, only one title (CT 175674/1) is proposed to receive biosolids. Property title information is provided in Table 2-1. A desktop assessment using LISTmap, in conjunction with a site visit and consultation with the landholder, has identified up to 65.6 ha to receive biosolids. The assessment has considered the site's characteristics and the required TBRG buffers (see Section 7.2).

There is no publicly available soil mapping for the parts of the property proposed to receive biosolids.

Published Land Capability[1] maps the areas to potentially receive biosolids as a mixture of Class 4 and Class 5+6 land. Class 4 land is described as land well suited to grazing, but which is limited to occasional cropping or a very restricted range of crops. Class 5 land is described as land unsuited to cropping and with slight to moderate limitations to pastoral use. Class 6 land is described as land marginally suited to grazing due to severe limitations. There is no mapped 'prime agricultural land' (Class 1-3) within the areas proposed to receive biosolids. Mean annual rainfall for the area is 939.8 mm[2].

2.2 TITLE INFORMATION AND APPLICATION AREAS

Table 2-1 provides title information for the property. This includes zoning as well as identification of the titles that are proposed to receive biosolids and those that are not. It also identifies which titles have an existing dwelling. Maps showing property titles and proposed application areas are in Appendix 1.

[1] Available on LISTmap

[2] Deloraine (ATHOL), BoM Station number (091000), data from 1884-2024

Table 2-1: Title information

PROPERTY	TITLE REFERENCE	ZONING	AREA (HA)	DWELLING ONSITE	DWELLING WITHIN 100 M OF SPREADING SITE	PROPOSED TO RECEIVE BIOSOLIDS
222-250 Weetah Rd	175674/1	Agriculture	409.1	Yes	No	Yes
	109559/2	Agriculture	151.2	Yes	NA	No
	114367/1	Agriculture	33.7	No	NA	No
	131929/2	Agriculture	28.3	Yes	NA	No
	131929/4	Agriculture	21.0	No	NA	No
	35150/2	Agriculture	26.4	Yes	NA	No
	166231/1	Agriculture	26.3	No	NA	No

3 Statutory requirements

This report and associated activities follow The *Tasmanian Biosolids Reuse Guidelines 2020* (TBRG) for biosolids reuse to ensure compliance with the *Environmental Management and Pollution Control Act 1994* (EMPCA). Under EMPCA, environmentally polluting activities, such as spreading of biosolids, are divided into categories and the responsibility for the regulation of activities is split between EPA Tasmania and Local Government. Biosolids reuse activities are either:

- **A "permitted use".** Under some Local Government Planning Schemes biosolids land application reuse activities may be considered a "permitted use" (agricultural right) and therefore may not require a permit under LUPAA. Local Government has an obligation, even in those cases, which do not require a permit, to ensure pollution does not arise as a consequence of these activities.
- **A "Level 1" Activity** under EMPCA. That is, an activity which may cause environmental harm and in respect of which a permit under the Land Use Planning and Approvals Act 1993 (LUPAA) is required but does not include a Level 2 or a Level 3 activity. Local Government are the regulatory authority of Level 1 activities. It is the EPA's position, that all spreading of biosolids that are Class 1 or Class 2 biosolids (see Section 4) is considered a Level 1 activity[3].

This plan proposes an application rate of greater than 50 wet tonnes per hectare. As the proposed application rates exceed the 'low rate' method outlined in the *Approved Management Method 2020* (AMM) (up to 50 wet tonnes per hectare), Environmental Approval is required to be obtained from the Director of the EPA under Regulation 21 of the *Waste Management Regulations 2020*, prior to any spreading as well as any approvals potentially required by Council.

3.1 LOCAL GOVERNMENT ROLES & RESPONSIBILITY UNDER THE TBRG

Under the TBRG (Section 5.5), Local Government is responsible for:

- Administering EMPCA in regard to activities that are not Level 2 or Level 3 activities, including the assessment and permitting as necessary and regulation of development proposals under LUPAA
- Responding to any incidents resulting from biosolids activities with the potential to cause environmental nuisance and / or affect public health
- Regulating 'Level 1' wastewater treatment plants
- Providing advice on applying these Guidelines.

The responsible entity (TasWater) for the end use of the Class 2 biosolids must ensure that they have obtained all required approvals before proceeding. This document (BMP) is to be provided to Council and the EPA to assist with the assessment of the activity. The activity shall not proceed until the Director of the EPA and Meander Valley Council provides an approval.

3.1.1 BIOSOLIDS REUSE AND PLANNING SCHEME ZONE

A key requirement of using land for agriculture is the replacement of nutrients removed by biomass removal (grazing, crop harvest) and the maintenance of soil conditions. Hence, the application of biosolids is consistent with the definition of Agricultural Use (Table 3.1 of the Planning Scheme). Agricultural Use is one of many activities that falls into the category of Resource Development (Table 6.2 of the Planning Scheme).

[3] Per comms with EPA Tasmania, dated 18 March 2025.

Resource Development may have a No Permit Required (NPR) qualification depending on the zoning of the land where the Resource Development activity is taking place (see Table 3-1).

Table 3-1: Resource development qualification per zone – examples

ZONE	RESOURCE DEVELOPMENT QUALIFICATION
8.0 General Residential	Prohibited
11.0 Rural Living	No permit required if the Resource Development activity is grazing
18.0 Light Industrial	Prohibited
20.0 Rural	No permit required
21.0 Agriculture	No permit required if the activity does not damage the soil profile or preclude the soil from future use as a growth medium
22.0 Landscape Conservation	Discretionary
30.0 Future Urban Zone	Permitted

3.1.2 BIOSOLIDS REUSE & PLANNING SCHEME CODES

Further to Planning Zone requirements for Resource Development activities, there are also a number of Codes within the Planning Scheme that require consideration. The relevant Codes for the application of biosolids to land are detailed below in Table 3-2, as are mitigation measures to ensure the activity will be compliant with each Code's requirements.

Table 3-2: Planning scheme code compliance

CODE	CODE REQUIREMENT	COMPLIANCE MEASURE
C1 Signage	Biosolids Reuse requires erection of Regulatory Signage (as per definition in Table C1.3 of the Planning Scheme).	Regulatory signs are exempt from specific requirements of the Code, as per Table C1.4. It is noted that areas that will receive biosolids have suitable signage as per Section 11 of the TBRG. Proposed signage is further detailed in Section 7.5.2 of this document.
C3 Road & Railway Assets	For vehicles that are longer than 5.5m movements must not increase on an annual basis by more than: ▪ 20% or 5 vehicle movements per day, whichever is greater.	150 truck movements will be required to transport the biosolids to the subject site from the STP. This will occur over a one-month period, with up to 14 truck movements per day. Over the course of a year these amounts to an average daily increase of 0.41 truck movements per day. The farm produces 3000 tonnes of both carrots and potatoes per annum. A similar level of stuck movements is required for both activities during harvest (March-May).
C7 Natural Assets	Biosolid reuse must minimise impacts on water quality, native riparian vegetation, river condition, and ecological function of watercourses.	Managed via compliance with the TBRG and additional measures identified in this Biosolids Management Plan (Section 7). It is noted that all titles that are proposed to receive biosolids are zoned Agriculture, hence the Natural Assets Code generally does not apply, except for Waterway and coastal Protection Areas. Biosolids application will not occur within the areas mapped as Waterway and Coastal Protections Areas of the Natural Assets Code where there are existing waterways. It is noted that there are two application zones (Stonehouse North South, and 13) with an area where the pastured areas mapped by the Code. See Figures 3-1 to 3-3. The site visit showed that these areas area clearly managed as pasture, with no defined channel or riparian vegetation. These areas would be utilised as part of normal farming operations including but not limited to; fertiliser application, liming, pasture renovation, pesticide and herbicide spraying, stock movement and general farm vehicle movement.

CODE	CODE REQUIREMENT	COMPLIANCE MEASURE
C9 Attenuation	Biosolids application is listed as an activity likely to cause emissions under Table C9.1 of the Code, which requires a 100m buffer from sensitive uses. Hence, spreading activities must comply with either the Acceptable Solutions or the Performance Criteria of C9.5.1.	Managed via compliance with the TBRG and measures identified in this Biosolids Management Plan (Section 7.2). These include a minimum buffer of 100 m from dwellings and a 250 m from land in a residential zone. There are dwellings located on adjacent titles within the Rural Living zone. However, none of these dwellings are within 100 m of the title boundary of the proposed application title. Furthermore, the nearest dwelling is 450 m from the proposed spreading areas (see A1-1). This is four times the recommended setback area from a dwelling as identified in the TBRG.

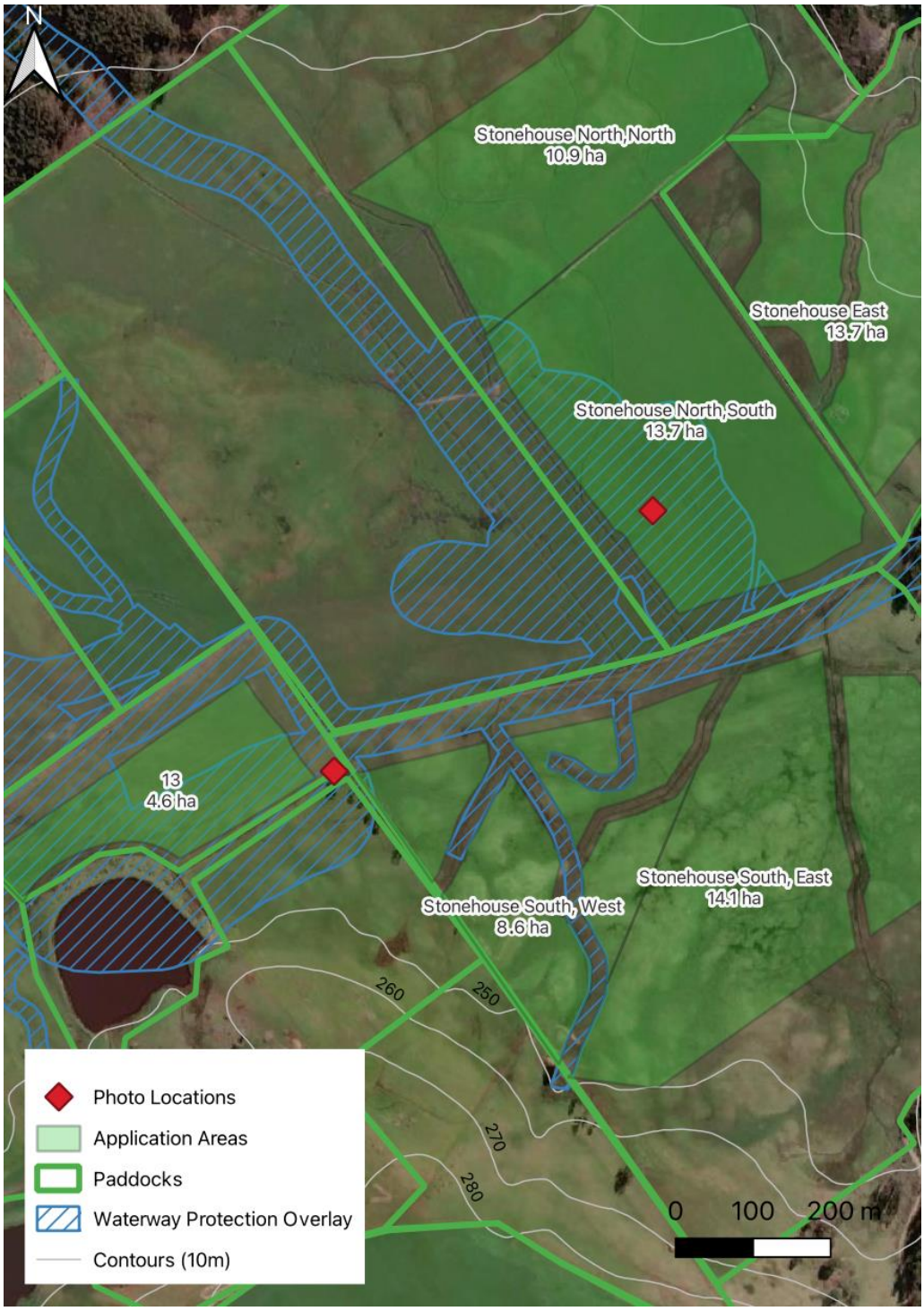

Figure 3-1: Waterway Protection Overlay compared to proposed application areas. Note the photo locations

Figure 3-2: Example of pastured area within the mapped waterway code area within Stonehouse North, South. Photo is looking west.

Figure 3-3: View of drainage line adjacent to the southern boundary of 13. According to the landholder, there is only water in this drain when the nearby dam spills. Note pasture in right of photo, this aligns with area mapped by waterway code. Setback will be in place from the drainage line as required.

4 Biosolids sources & quality assessment

4.1 BIOSOLIDS SOURCES

Biosolids to be supplied to the subject property will be sourced from Lagoon 2 of the Deloraine STP. Surveyed sludge volumes (Table 4-1) provided by TasWater show that 3,600 wet tonnes (or 360 dry tonnes) are to be removed from Lagoon 2 at the Deloraine STP. If an average application rate to land of 200 wet tonnes per hectare can be achieved, then approximately 18 ha of land will be required to spread the biosolids.

Table 4-1: Deloraine STP Lagoon 2 sludge characteristics

LAGOON	% SOLIDS CONTENT	WET TONNES (M^3)	DRY TONNES
2	10%	3,600	360

4.2 BIOSOLIDS DATA

TasWater has supplied RMCG with analytical data for the biosolids from the STP for the purposes of preparing this BMP and demonstrating a sound process of quality classification to allow reuse in accordance with the requirements of the TBRG. The data is from April and May 2025 and details information on nutrients, contaminants, stabilisation and solids percentages for the biosolids. Sampling of Lagoon 2 involved 12 grab subsamples collected at even points around the lagoon. Subsamples were combined into three samples for analysis.

4.3 BIOSOLIDS QUALITY CLASSIFICATION

All biosolids supplied to the subject land for direct land application must be classified (in accordance with the TBRG) as Class 2 as a minimum. Biosolids quality classification combines an assessment of:

1. Contaminant grade: the level of contamination from heavy metals or other typical biosolid contaminants; and
2. Stabilisation grade: the degree of pathogen reduction, vector attraction, and odour.

For biosolids classification to be Class 2, both stabilisation and contaminant grade must be a minimum of Grade B. Non-Grade B material requires further processing (e.g. composting) prior to application to land. See Table 4-2 for the biosolids classification system and allowable end uses.

Table 4-2: Classification of Biosolids Allowable End Uses (TBRG Table 9.1)

CLASSIFICATION	CONTAMINANT GRADE	STABILISATION GRADE	ALLOWABLE END USE	ADDITIONAL REQUIREMENTS
Class 1 biosolids	A	A	Home garden (retail sale) Urban landscaping	Labelling
Class 2 biosolids	A	B	Site rehabilitation Agriculture Forestry Composting	Demonstrate application is below NLAR. LUPPA permit may be required, contact Local Government.
	B	A		
	B	B		
Sewage sludge	A or B	Unclassified	EPA approval licensed facility (landfill and reprocessing facilities).	Sewage sludge is a Controlled Waste and therefore subject to legislated requirements.
	Unclassified	A or B		
	Unclassified	Unclassified		

4.3.1 CONTAMINANT GRADE ASSESSMENT

TasWater is required to assess biosolids contaminant grades for each STP from which biosolids are proposed to be beneficially reused on agricultural land. The contaminant grade assessment assumes that TasWater have undertaken a recent risk-based assessment and considered the testing of additional analytes. See Table 4-3 for Grade A and Grade B biosolids acceptable contaminants concentration (BACC) thresholds.

Table 4-3: Contaminant acceptance concentration threshold for biosolids (TBRG Table 7.1)

CONTAMINANT	GRADE A (MG/KG DRY WEIGHT)	GRADE B (MG/KG DRY WEIGHT)
Arsenic	20	60
Cadmium	1	20
Chromium (total)	50	300
Copper	100	2,500
Lead	150	420
Mercury	1	15
Nickel	60	270
Zinc	200	2,500

Should any analyte present with a BACC above the Grade B threshold, then biosolids from the STP are unsuitable for reuse in accordance with this BMP until the BACC becomes Grade B compliant. TasWater is required to advise all stakeholders on changes in BACC classification as soon as possible. See Table 4-4 for the BACC grading of the biosolids from Lagoon 2 of the Deloraine STP that are proposed to be spread at the subject site.

Table 4-4: Biosolids adjusted contaminant concentration (BACC) in supplied results and associated contaminant grading for Lagoon 2 of Deloraine STP

CONTAMINANT*	DELORAINE STP, LAGOON 2
Arsenic	0.7
Cadmium	<0.1
Chromium	24.3
Copper	10.3
Lead	4.6
Mercury	<0.03
Nickel	13.4
Zinc	35.7
Grade	A

**Green shading indicates the contaminant meets Grade A standard and blue indicates the contaminant meets Grade B standards.*

Biosolids from Lagoon 2 of the Deloraine STP meet Grade B requirements as a minimum for BACC.

4.3.2 STABILISATION GRADE ASSESSMENT

To address health and nuisance odour risks, sewage sludge must be treated to an appropriate standard before reuse. Biosolids that have been suitably treated are considered “Stabilised”.

Stabilisation should be achieved via an approved process. In this case, to demonstrate Class B biosolids for lagoon systems, the appropriate process is anaerobic digestion at 15^{o} for >180 days (TBRG Table 8.5). Lagoon 2 has not been desludged in more than 10 years.

Stabilisation requirements fall into three categories, all of which must be met:

1. Biosolids must not exhibit a strong, offensive odour

TasWater is conducting ongoing lagoon desludging works across the state with sludges of varying ages. In no case has odour been an issue and TasWater expect that the Deloraine biosolids will be no different.

2. An approved vector attraction reduction requirement must be met (TBRG Table 8.1)

Table 4-5 shows the vector attraction reduction (VAR) option used for these biosolids. TasWater, through working with the EPA, identified that the TBRG did not provide an approved VAR option for lagoon stabilised sludge. As a result, the EPA have approved an alternate testing regime for lagoon stabilised sludge to demonstrate VAR in accordance with Option 9 in Table 8.1 of the TBRG[4]. The alternative testing regime at the time of desludging must demonstrate a Volatile Solids content of not greater than 60% (assuming 90% volatile solids at the inlet) and a sludge age of >4 years to demonstrate that the VAR requirements have been met. At least seven sludge samples must be collected. See Table 4-6 below, which shows an average Volatile Solids content of 2.5%.

Table 4-5: Vector attraction reduction process

OPTION	VECTOR ATTRACTION REDUCTION OPTION	BIOSOLIDS MOST SUITED
9	Other methods demonstrating minimum re-growth potential verified by an approved testing regime	Biosolids which do not satisfy any of the other options above.

Table 4-6: Volatile solids data from Deloraine STP Lagoon 2

SAMPLE	VOLATILE TOTAL SOLIDS (%)
Deloraine STP Lagoon #2 - 1	1.4
Deloraine STP Lagoon #2 - 4	2.2
Deloraine STP Lagoon #2 - 5	4.0
Deloraine STP Lagoon #2 - 6	2.1
Deloraine STP Lagoon #2 - 9	2.8
Deloraine STP Lagoon #2 - 10	1.5
Deloraine STP Lagoon #2 - 11	3.4
Mean	2.5

[4] Letter from EPA to TasWater, dated 29 May 2025, Ref 24/81.007, D25-74794

3. The Pathogen reduction criteria must be achieved for the intended end use

Biosolids intended for reuse as detailed in this plan must meet the Microbiological Criteria for Stabilisation Grade B (Table 4-7). Biosolids that do not meet this criterion shall be sent to an alternative approved facility for further processing. Table 4-8 shows the stabilisation grading of the biosolids from the Deloraine STP (Lagoon 2) that will be spread on the subject site.

Table 4-7: Microbial Criterion Stabilisation Grade B (from Table 8.4 of the TBRG)

MICROBIOLOGICAL CRITERIA (BASED ON DRY WEIGHT OF PRODUCT)	MONITORING REQUIREMENTS
<2,000,000 E. coli CFU (or MPN) per gram (geometric mean of at least 7 sample results).	Initial verification process

Table 4-8: Stabilisation grading of biosolids to be delivered to the farm for land application

SITE	SAMPLE TYPE	E. COLI/MPN/G	STABILISATION CLASSIFICATION
Deloraine STP Lagoon #2 - 1	Grab	<100	Grade B
Deloraine STP Lagoon #2 - 4	Grab	<100	Grade B
Deloraine STP Lagoon #2 - 5	Grab	<100	Grade B
Deloraine STP Lagoon #2 - 6	Grab	<100	Grade B
Deloraine STP Lagoon #2 - 9	Grab	<100	Grade B
Deloraine STP Lagoon #2 - 10	Grab	<100	Grade B
Deloraine STP Lagoon #2 - 11	Grab	<100	Grade B
Mean		**<100**	**Grade B**

Stabilisation grading meets Grade B requirements as per the TBRG.

4.3.3 BIOSOLIDS CLASS

Both the biosolids contamination grade and stabilisation grade of the biosolids destined for the subject site comply with Grade B requirements as a minimum. Hence, all biosolids from Lagoon 2 of the Deloraine STP are considered Class 2 biosolids and are suitable for land application.

4.4 PFAS

The NEMP 3.0 sets maximum thresholds for PFAS (PFOS+PFHxS and PFOA) for restricted use biosolids (Class B biosolids). These are shown in Table 4-9. There are three identified margins of safety (MOS), with 1 being the default level used (NEMP 3.0).

Table 4-9: Criteria for PFOS+PFHxS and PFOA

CRITERIA TYPE	MARGIN OF SAFETY	PFOS+PFHXS (µG/KG)	PFOA (µG/KG)
Biosolids threshold restricted use (Class B)	5	6.2	16
	2	15	40
	1	31	81

Table 4-10 shows the tested PFAS levels for the Deloraine STP.

Table 4-10: PFOS+PFHxS and PFOA for the Deloraine STP, Lagoon 2

PFOS+PFHxS (µg/kg)	PFOA (µg/kg)	MARGIN OF SAFETY
LOR[5] <0.2	LOR <0.2	Meets MOS 1, 2, and 5
<0.2	<0.2	Meets MOS 1, 2, and 5

PFAS levels from Deloraine STP Lagoon 2 meet all three MOS levels.

4.5 BIOSOLIDS NITROGEN LEVELS

Nitrogen (N) analyses have been provided for the biosolids to assist with Nitrogen Limiting Application Rates (NLAR) calculations. Sampling was completed on 22 May 2025. The mean N levels for biosolids from Lagoon 2 at the Deloraine STP are displayed in Table 4-11.

Table 4-11: Mean biosolids nitrogen levels from Lagoon 2, Deloraine STP, 22 May 2025

SITE	AMMONIUM MEASURED AS AMMONIA (NH3)	NITRATE (NO3) + NITRITE (NO2)	TOTAL KJELDAHL NITROGEN (TKN)
Deloraine STP, Lagoon 2	51.3	4.4	1,858

[5] Laboratory limit of report (LOR)

5 Soils assessment

5.1 AREA AVAILABILITY

In consultation with the manager of 222-250 Weetah Rd, land was selected for potential sites for biosolids application. Table 5-1 below shows biosolids application (net) areas of the 6 zones (paddocks) that were sampled, Figure A1-2 in Appendix 1 shows the aerial image of the zones. Biosolids application areas are calculated under consideration of setbacks for public access, waterways, and other buffer zones, as per the TBRG and Section 7.2 of the associated BMP for the property.

Table 5-1: Application zones and areas (ha)

ZONE	BIOSOLIDS APPLICATION AREA (HA)
13	4.6
Stonehouse East	13.7
Stonehouse North, North	10.9
Stonehouse North, South	13.7
Stonehouse South, East	14.1
Stonehouse South, West	8.6
Total	**65.6**

5.2 SOIL SAMPLING PROCEDURES

Samples from the 6 zones (paddocks) listed in Table 5-1 were taken on 12 September 2025.

Samples were taken with a 100 mm tube sampler[6], with cores of approximately 20 mm diameter. Within each area a minimum of 30-40 cores were taken by following a “zig-zag” path over the paddock. All the cores within each paddock zone were bulked and retained to provide a single composite sample for each zone for nutrient analysis and a second composite sample for heavy metal analysis.

PFAS samples have been collected for at least one zone in five across the sample site. This number has been chosen to assess if there are baseline PFAS level indicators at various locations across the site. If PFAS levels are detected at above the NEMP 3.0 MOS 1 levels for soils (see Table 4-9) then further testing would be conducted to assist with determining if the site is suitable to receive the identified biosolids.

Samples were dispatched to Nutrient Advantage Laboratories in Werribee, (NATA Accredited Laboratory 11958) and analysed with standard procedures. Further samples were dispatched to ALS in Scoresby (NATA Accredited Laboratory 992) to assess heavy metals and PFAS in the soils.

5.3 ANALYTICAL RESULTS: RECEIVING SOILS

The following results of soil analyses by zone are classified using a “traffic light” system to highlight where soil fertility levels or soil characteristics require attention when using biosolids; the “red lights” show where either low or high levels occur and may be reducing plant growth / health (Table 5-2). High levels of nutrients are not classified as affecting plant growth negatively unless they are at toxic levels. Where excessive nutrient levels are present and not likely to affect plant growth, but may cause off site impacts or environmental harm, results are highlighted separately (grey). Comment is made where high nutrient levels and or imbalances may affect the health of livestock.

[6] Reference: FertSmart “Soil test guidelines for optimum dairy pasture production” by University of Tasmania

Table 5-2: Table colour reference

NO ACTIONS	NEEDS MONITORING	MAY BE AFFECTING PLANT GROWTH	NOT AFFECTING PLANT GROWTH BUT MAY HAVE OFF SITE / ENVIRONMENTAL IMPACT

5.3.1 ACIDITY, pH

pH levels have been measured as pH in water and $CaCl_2$.

Table 5-3: pH in 11 zones

PADDOCK	PH (1:5 IN H20)	PH (1:5 IN CACL2)	RATING BASED ON PH H2O
13	6.1	5.3	Acidic
Stonehouse East	6.5	5.7	Slightly acidic
Stonehouse North, North	6.1	5.2	Acidic
Stonehouse North, South	6.6	6.0	Slightly acidic
Stonehouse South, East	6.3	5.4	Slightly acidic
Stonehouse South, West	5.8	4.9	Acidic

pH levels are acidic to slightly acidic (Table 5-3). The pH levels are in the allowable range for application of biosolids as defined in Table 11.1 of the *Tasmanian Biosolids Reuse Guidelines*.

5.3.2 ELECTRICAL CONDUCTIVITY (MEASURED IN A 1:5 SOIL: WATER SUSPENSION)

Salinity has been determined via measuring electrical conductivity (EC) as EC 1:5. The EC 1:5 values have been converted to ECse using conversion factors for loam soils and clay loam soils: 12.

Table 5-4: Electrical conductivity (EC) in 6 zones

PADDOCK	EC1:5 (ds/m)	SOIL TEXTURE	CONVERSION FACTOR	ECse dS/m (CALC)	RATING
LOR	0.01				
13	0.12	Light Clay	11	1.32	Low
Stonehouse East	0.07	Loam	12	0.84	Low
Stonehouse North, North	0.09	Light Clay	11	0.99	Low
Stonehouse North, South	0.07	Sandy Loam	14	0.98	Low
Stonehouse South, East	0.08	Sandy Loam	14	1.12	Low
Stonehouse South, West	0.06	Sandy Clay Loam	12	0.72	Very low

Salinity levels are low (Table 5-4) and will not be impacted by biosolids application. The organic matter in biosolids may improve soil structure and thus drainage. This could lead to leaching of chloride and a further reduction of EC.

5.3.3 ORGANIC CARBON (WALKLEY-BLACK)

Table 5-5: Organic carbon in 6 zones

PADDOCK	ORGANIC CARBON %	ORGANIC MATTER %	RATING
LOR	0.20	Calc	
13	5.12	8.80	High
Stonehouse East	3.30	5.70	Generally satisfactory
Stonehouse North, North	3.61	6.20	Generally satisfactory
Stonehouse North, South	3.05	5.20	Generally satisfactory
Stonehouse South, East	3.88	6.70	Generally satisfactory
Stonehouse South, West	4.11	7.10	Generally satisfactory

Organic carbon levels range from generally satisfactory to high (Table 5-5). Soils will generally benefit from the additional organic matter applied via biosolids, even if levels are high.

5.3.4 PHOSPHORUS

Available phosphorus (measured as Colwell P) and Phosphorus Buffer index (PBI) are provided in Table 5-6.

Phosphorus Environmental Risk Index (PERI) is the Ratio of Colwell P / PBI. It is an indicator of risk of possible P leaching into waterways and environmental damage. The PERI should be < 1 to be safe for production and the environment[7]. The calculated PERI for each zone is also shown in Table 5-6.

Table 5-6: Available phosphorus in 6 zones

PADDOCK	AVAILABLE P (mg/kg)	COMMENT	PBI	PBI COMMENT	PERI	RATING
LOR	5.00		Calc		Calc	
13	80	High	480	Very high	0.17	Optimum
Stonehouse East	28	Low	280	High	0.10	Optimum
Stonehouse North, North	30	Low	430	Very high	0.07	Optimum
Stonehouse North, South	22	Very low	180	Moderate	0.12	Optimum
Stonehouse South, East	25	Very low	240	High	0.10	Optimum
Stonehouse South, West	37	Low	400	Very high	0.09	Optimum

Phosphorus (P) levels in the soils range from very low to low and the phosphorus buffer index (PBI) of the soils is moderate to very high (Table 5-6). Leaching, as indicated by the PERI, is generally considered to be low risk. However, no additional P should be applied after biosolids have been spread.

[7] Reference: https://fertsmart.dairyingfortomorrow.com.au/, Dairy Australia :

5.3.5 NITROGEN

Table 5-7: Nitrogen (N, Total and Available) in 6 zones

PADDOCK	TOTAL NITROGEN (LECO) (mg/kg)	AMMONIUM NITROGEN NH_4 (mg/kg)	NITRATE NO_3 & NITRITE NO_2 (mg/kg)	TOTAL AVAILABLE NITROGEN (mg/kg)
LOR	50		1.0	Calc
13	4400	15.0	4.5	19.5
Stonehouse East	2900	16.0	3.7	19.7
Stonehouse North, North	3200	11.0	1.8	12.8
Stonehouse North, South	2000	14.0	3.3	17.3
Stonehouse South, East	3200	16.0	4.6	20.6
Stonehouse South, West	3300	12.0	2.7	14.7

Available N (NH_4 and NO_2) levels are generally low, and the soils will benefit from available N in biosolids.

5.3.6 CLAY CONTENT

Table 5-8: Clay content (Texture) in 6 zones

PADDOCK	CLAY CONTENT %
LOR	0
13	24.9
Stonehouse East	22.7
Stonehouse North, North	21.9
Stonehouse North, South	25.6
Stonehouse South, East	26.4
Stonehouse South, West	22.9

Soil clay content is between 17 to 26%.

5.3.7 HEAVY METALS

Table 5-9: Heavy Metals (mg/kg) in 6 zones

PADDOCK	ARSENIC	CADMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC
LOR	<5	<0.2	<5	<5	<0.05	<5	<5
13	<5	<0.2	33	17	<0.05	39	39
Stonehouse East	<5	<0.2	33	28	<0.05	49	45
Stonehouse North, North	<5	<0.2	40	28	<0.05	44	49
Stonehouse North, South	<5	<0.2	7	10	<0.05	11	16
Stonehouse South, East	<5	<0.2	7	9	<0.05	13	16
Stonehouse South, West	<5	<0.2	6	7	<0.05	10	9

Heavy metal levels are low in all soils.

5.3.8 PFAS

Table 5-10: PFAS levels (µg/kg)

PADDOCK	PFOS+PFHxS (µg/kg)	PFOA (µg/kg)
LOR	<0.2	<0.2
Stonehouse East	<0.2	<0.2
Stonehouse South, West	<0.2	<0.2

PFAS levels are below the detectable limit of reporting (LOR) levels.

Further soil sample results are provided in Appendix 3. Sample results from both laboratories have been provided to the EPA as separate documents.

6 Biosolids application

6.1 APPLICATION LIMITATIONS

Application rates of Class 2 biosolids to land are limited by the level of metal contaminants, the available nitrogen and PFAS. To demonstrate compliance with the TBRG, two limiting rate calculations are required:

- Contaminant limiting application rate (CLAR)
- Nitrogen limiting application rate (NLAR).

In addition to the above calculations, consideration of potential for PFAS to impact the site is also calculated as per the NEMP 3.0 requirements.

6.2 CONTAMINANT LIMITING APPLICATION RATE

6.2.1 BIOSOLIDS ADJUSTED CONTAMINATION CONCENTRATIONS

Biosolids adjusted contamination concentrations (BACC) have been calculated (as per the methodology described by the TBRG) from data supplied by TasWater and is shown in Section 4.3.1.

6.2.2 MAXIMUM ALLOWABLE SOIL CONTAMINANT CONCENTRATIONS

According to the TBRG, the maximum allowable soil contaminant concentrations (MASCC) for arsenic, lead, mercury, and nickel are fixed. For cadmium, copper, and zinc, the MASCC varies with the soil conditions and can be calculated using Tables D2, D3, D4, and D5 of the TBRG. Table 6-1 shows the MASCC for all contaminates. For cadmium, copper, and zinc, when the MASCC was calculated, the most conversative relevant MASCC calculation was used.

Table 6-1: MASCC for each element

ELEMENT	MASCC (MG/KG)
Arsenic	20
Cadmium	1.17 (Calculated)
Copper	79 (Calculated)
Lead	200
Mercury	1
Nickel	60
Zinc	170 (Calculated)

6.2.3 CALCULATION OF CONTAMINANT LIMITING APPLICATION RATE

The CLAR is the rate (in dry solid tonnes per hectare) that will cause the concentration of the limiting contaminant to reach the maximum allowable soil contamination concentration. The CLAR is derived from the BACC and current soil concentration of contaminants (see Table 5-9).

The calculation for the CLBAR is as follows:

CLAR = (MASCC – ASCC) x SM / BACC

Where:

- CLAR = Contaminated Limited Application Rate (dry t/ha)
- MASCC = Maximum Allowable Coil Concentration (mg/kg)
- ASCC = Actual Soil Contaminant Concentration (mg/kg)
- BACC = Biosolids Adjusted Contaminant Concentration (mg/kg)
- SM = Incorporated Soil Mass per hectare (dry t/ha) (soil bulk density (g/cm^3) x incorporation depth (m) x $10,000m^2$) (1.33 x 0.1 x 10000 = 1330 SM t/ha).

CLAR calculations are shown in Table 6-2. Wet t/ha are calculated by dividing the dry tonnes by the estimated biosolids solids percentage (10%). Based on the calculated results, copper is the limiting contaminant for all zones. It is noted that application rates required to exceed the CLAR are well above any likely application rate on the site.

Table 6-2: CLAR calculations

	ARSENIC		CADMIUM		COPPER		LEAD		MERCURY		NICKEL		ZINC		LIMITING CONTAMINANT
	Dry t/ha	Wet t/ha	Dry t/ha	Wet t/ha	Dry t/ha	Wet t/ha	Dry t/ha	Wet t/ha	Dry t/ha	Wet t/ha	Dry t/ha	Wet t/ha	Dry t/ha	Wet t/ha	
13	2,463	24,630	12,901	129,010	82	821	3,512	35,121	903	9,025	743	7,428	121	1,210	Copper
Stone house East	2,463	24,630	12,901	129,010	82	821	3,301	33,010	903	9,025	389	3,891	115	1,154	Copper
Stone house North, North	2,463	24,630	12,901	129,010	70	696	3,301	33,010	903	9,025	566	5,660	112	1,117	Copper
Stone house North, South	2,463	24,630	12,901	129,010	129	1,286	3,646	36,465	903	9,025	1,733	17,332	142	1,422	Copper
Stone house South, East	2,463	24,630	12,901	129,010	129	1,286	3,666	36,657	903	9,025	1,663	16,625	142	1,422	Copper
Stone house South, West	2,463	24,630	12,901	129,010	130	1,303	3,704	37,040	903	9,025	1,769	17,686	149	1,486	Copper

6.3 PFAS LIMITING CONTAMINANT APPLICATION RATE

Application rates may also be impacted by PFAS levels. The suitability and thus application rates are determined using the following flow chart from the NEMP 3.0 Supporting Document 1.

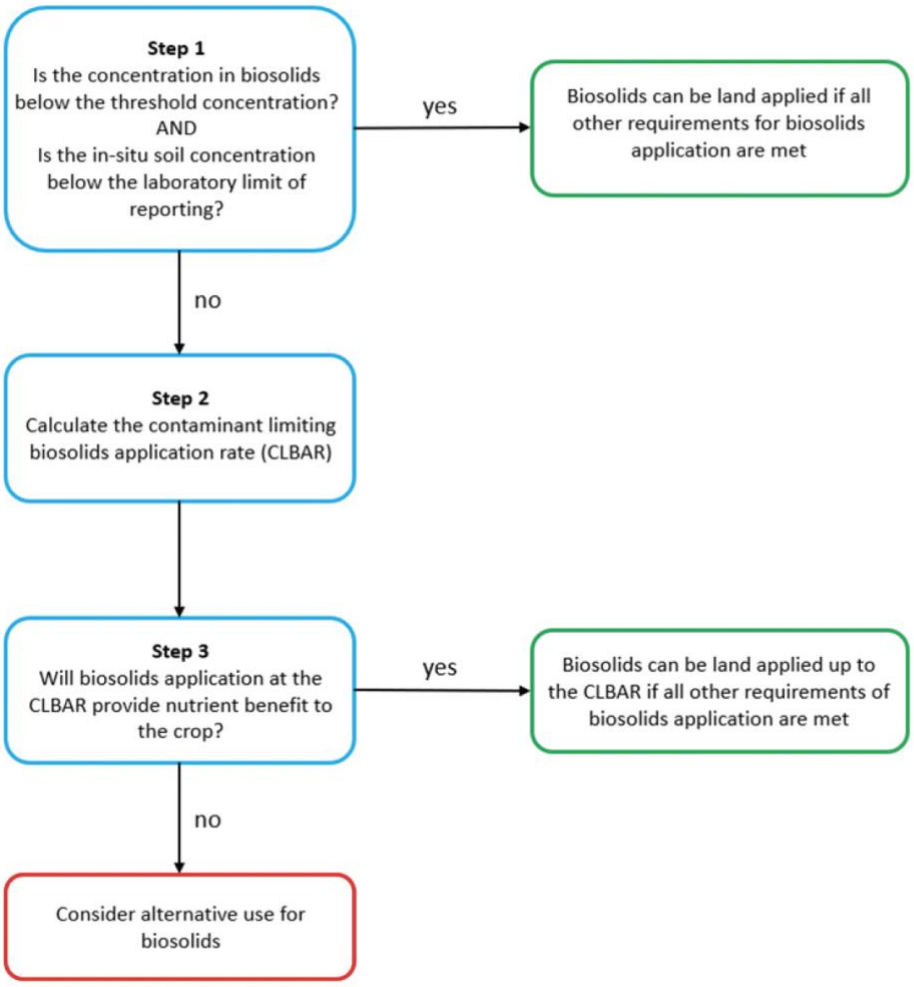

Figure 6-1: Flowchart of framework to assess suitability of Class B biosolids for land application, PFAS (NEMP 3.0)

The CLBAR is calculated via the following formula.

$$CLBAR = \frac{MASCC - MISCC}{C\ bio}\ x\ SM$$

Where:

- MASCC is the maximum allowable soil contaminant concentration (in µg/kg – see Table 6-3)
- MISCC is the measure in-situ soil contaminant concentration (in µg/kg – to be confirmed as part of soil sampling)
- C bio is the biosolids contaminant concentration (in µg/kg)
- SM is the incorporated soil mass per hectare (in dry t/ha – a stand measure of 1.3 t/m^3 will be used).

In this instance the biosolids PFAS concentrations are below all threshold concentrations for all MOS levels (see Table 4.8) and the soils levels a below the laboratory limit of reporting (see Table 5-9). This means that all measures in Step 1 of the above flow chart are met and so biosolids can be applied to the land without further consideration of PFAS as long as other application requirements are adhered to.

Table 6-3 below shows the maximum allowable soil contaminant concentrations (MASCCs).

Table 6-3: MASCCs for PFAS

CRITERIA TYPE	MARGIN OF SAFETY	PFOS+PFHxS (µg/kg)	PFOA (µg/kg)
Allowable soil contaminant concentrations MASCC	5	0.22	0.6
	2	0.55	1.5
	1	1.1	3

6.4 NITROGEN LIMITING APPLICATION RATE

According to the TBRG, the application rate of N from Biosolids should not exceed the N demand of the crop, known as the Nitrogen Limiting Biosolids Application Rate (NLAR).

6.4.1 AVAILABLE N IN BIOSOLIDS

Available N refers to the mineral N (nitrate, nitrite, and ammonium). Results are determined using the formula provided in the TBRG.

$$\text{ABN (kg/t)} = \frac{(\text{ammonium N (mg/kg)} + \text{oxidised N (mg/kg)} + \text{organic N (mg/kg)}) \times \text{MR \%}/100)}{1{,}000}$$

ABN = available biosolids nitrogen

Where:

- Organic N = TKN – ammonium N
- Oxidised N = N as nitrate & nitrite
- TKN = Total Kjeldahl Nitrogen
- MR = Mineralisation Rate.

This calculation is based on the following inputs which are the averages from biosolids analysis:

Table 6-4: Biosolids inputs

INPUT	RESULT
Organic N	3227.3 mg/kg
Oxidised N	6.7 mg/kg
TKN	3300 mg/kg
MR	20%
Solids	10%
ABN dry tonne	0.73 kg/t
ABN wet tonne	0.07 kg/t

6.4.2 CROP REQUIREMENT FOR NITROGEN (N)

The next step is to identify the crop requirement. The pasture crop nitrogen requirement for the subject sites is estimated to be at least 240 kg/ha annually. This is based on pasture N removal of 30 kg/t dry matter (DM), and 8 t/ha DM removal via grazing and fodder removal in the region[8]. Applications of nitrogen to pastures are

[8] Based on TIAR Regional Historical Pasture Production (2005/06 to 2017/18). Information for Deloraine

usually limited to about 30-35 kg/ha per post grazing application to maximise the efficiency of nitrogen uptake and minimise losses to the air via volatilisation and or denitrification, leaching of nitrates into groundwater, or run-off to surface water.

Total annual N applications via fertilisers to pastures used for grazing in the region are commonly 60 - 300 kg/ha, depending on climate, irrigation availability, and soil / pasture quality, which greatly determines the dry matter production potential. For this case, we have based calculations on a well-managed, productive pasture with no constraints to productivity (8 t DM/ha) so that at least 240 kg N/ha can be utilised by pasture over the main growing season (late spring to mid-autumn).

6.4.3 AVAILABLE N IN SOIL

The soil analysis shows there are between 14.7 mg/kg and 20.6 mg/kg of available N in the zones assessed to 100 mm depth at the property (see Table 5-7).

6.4.4 NITROGEN LIMITED APPLICATION RATE (NLAR) FOR THE BIOSOLIDS

NLAR has been calculated using the formula provided in Appendix D of the TBRG. To ensure that excessive nitrogen is not applied in one event, the actual application rate has been calculated at 50% the NLAR. It is also strongly recommended that the total allowable application to each paddock occurs over two spreading events, to reduce leaching risks, if the soil is near or at field capacity[9]. If the soil is dry, the full rate may be applied. NLAR calculations are shown in Table 6-5.

[9] Assessed by a field guide provided to spreading contractors

Table 6-5: NLAR calculations

SITE	ANNUAL CROP REQUIREMENT N (kg/ha)	AVAILABLE N (mg/kg)	N SHORTFALL (mg/kg)	AVAILABLE BIOSOLIDS N (ABN) (kg/dry tonne)	BIOSOLIDS % SOLIDS	ABN (kg/wet tonne)	NLAR wet t/ha	NLAR 50% (wet t/ha)
13 & 14	240	19.7	220.3	0.73	10	0.42	3288	1644
Stonehouse East	240	12.8	227.2	0.73	10	0.42	3018	1509
Stonehouse North, North	240	17.3	222.7	0.73	10	0.42	3112	1556
Stonehouse North, South	240	20.6	219.4	0.73	10	0.42	3051	1526
Stonehouse South, East	240	14.7	225.3	0.73	10	0.42	3005	1503
Stonehouse South, West	240	19.7	220.3	0.73	10	0.42	3086	1543

6.5 MAXIMUM ALLOWABLE BIOSOLIDS APPLICATION RATE

Biosolid and soil sample analysis results have been used to calculate the maximum application rates based on CLAR, NLAR and PFAS as well as other limiting soils properties such as phosphorus and/or salinity. When considering CLAR, NLAR and PFAS, all application rates are limited by the NLAR and the imposed application rate of no greater than 50% of the NLAR. In this instance the 50% NLAR rate is higher than what is practical to apply to land. Hence, a consistent spreading rate across the site to avoid over applying watery sludge of **200 wet tonnes/ha** has been recommended for areas. This ensures the NLAR is the limiting factor, and it will also ensure there is more than sufficient land to spread the3,600 wet tonnes of biosolids that will be removed from the Deloraine STP.

Application rate, application area and total number of biosolids to be applied per paddock are shown in Table 6-6. Further notes and / or setback requirements are also provided. Biosolids are to be applied between October and April / early May. There is more land available than required to spread all biosolids from Deloraine Lagoon 2. If there is standing water in a paddock, then biosolids cannot be applied.

Table 6-6: Total biosolids application rates for identified zones on the property

ZONE	APPLICATION AREA (HA)	APPLICATION RATES (WET T/HA)	TOTAL BIOSOLIDS (T)	NOTES/SETBACKS
13	4.6	200	920	▪ 50 m Dungiven Rivulet ▪ 10 m from drainage line to the south
Stonehouse East	13.7	200	2740	▪ 10 m from drainage line that flows north to south ▪ 10 m from drainage line along eastern boundary ▪ 50 m from property boundary ▪ Avoid wet areas in western corner
Stonehouse North, North	10.9	200	2180	▪ 50 m setback from property boundary ▪ Do not apply on slopes greater than 15%
Stonehouse North, South	13.7	200	2740	▪ 50 m setback from Dungiven Rivulet ▪ 10 m setback from drainage line along eastern boundary
Stonehouse South, East	14.1	200	2820	▪ 50 m setback from property boundary ▪ 10 m setback from all drainage lines ▪ Do not apply on slopes greater than 15%
Stonehouse South, West	8.6	200	1720	▪ 50 m setback from Dungiven Rivulet ▪ 10 m setback from drainage line along eastern boundary
Total	**72.9**		**13,120**	

7 Biosolids management actions

This section details management actions that will be undertaken as part of the biosolids application program to minimise the risk to nearby sensitive receptors and the environment.

7.1 ODOUR MANAGEMENT

Only Grade A and Grade B biosolids are permitted to be reused at the application site. By definition, Grade A and Grade B biosolids should not exhibit offensive odours. TasWater, as the resource producer, is responsible for producing and classifying biosolids and play the primary role in preventing offsite odours from biosolid reuse activities.

All treatment plants producing biosolids that will be delivered to the site are required to meet the approved processes for producing stabilisation Grade B product and must also meet multiple process verification requirements (TBRG Section 8). TasWater must be able to provide the following information to regulators to demonstrate that appropriate stabilisation has occurred (TBRG Section 8.4.1):

1. Evidence that the process achieves vector attraction reduction requirements (TBRG Table 8.1)
2. Test results from a suitably accredited laboratory (such as NATA or ASPAC) showing compliance with maximum pathogen levels for Stabilisation Grade A or Stabilisation Grade B (results shown in this BMP in Table 4-5)
3. Measurements of relevant process criteria (e.g. retention times / reaction times / temperature / pH / moisture / other process controls) to ensure compliance with designated stabilisation process.

With the approved process criteria being met all biosolids delivered to the site can be considered Grade B and therefore all management methods and buffer zones detailed in the TBRG and in this Management Plan will be effective in preventing offsite odours. The TBRG is informed by significant modelling and assessment of the odour generation potential of Grade B biosolids produced in Australia and advises that “adequately stabilised biosolids should not exhibit strong, offensive odour”.

7.2 BUFFER ZONES AND PHYSICAL SITE RESTRICTIONS

As a minimum, buffer and physical site restrictions must consider all elements identified in Table 11.1 of the TBRG. These requirements are detailed below in Table 7-1. In this instance, the nearest dwelling to the proposed spreading area will be at a distance greater than 500 m.

Table 7-1: Buffer zones and physical site restrictions (TBRG Table 11.1)

SITE CHARACTERISTICS	RESTRICTION		ADDITIONAL INFORMATION
Slope	<15% (<1:7 ratio)		To prevent run-off and erosion. Forestry and site rehabilitation are possible exceptions with management controls this can be increased to <25%.
Buffer Distances	Open watercourse downslope	>100m	Buffer zones are used to reduce the likelihood of run-off, dust or odour affecting adjacent land or watercourses.
	Open watercourse flat	>50m	
	Open watercourse upslope	>10m	
	Occupied dwellings	>100m	
	Residential zones	>250m	

SITE CHARACTERISTICS	RESTRICTION		ADDITIONAL INFORMATION
	Public roads and adjoining properties	>50m	
	Water bores	>50m (>250m if drinking water bore)	
	Native forests or significant vegetation	>10m	
	Property access roads	>5m	
Soil pH	>4.5		This restriction does not apply to lime amended biosolids.
	<7.5		<7 applies to lime amended biosolids only.
Undesirable Drainage	Waterlogged, flood prone or extremely permeable soils		To prevent run-off or groundwater contamination.
Shallow Groundwater	>1.5m to groundwater		To prevent run-off or groundwater contamination.
	Average Clay % (0-100cm)	Minimum depth to groundwater	
	>35%	1.5m	
	25-35%	2m	
	15-25%	3m	
	10-15%	4m	
	5-10%	5m	
	<5%	8m	
Rocky Ground	Untillable land		Forestry and site rehabilitation are possible exceptions with management controls in place.

7.3 TRANSPORT AND DELIVERY OF BIOSOLIDS

The transport of biosolids to the property will be undertaken by a contractor who is registered to transport K130 categorised controlled wastes. All delivered weights are to be recorded and retained in a suitable database by the contractor. Validation of full-load weights via a weighbridge is recommended for sites without scales and it is recommended that all trucks carting biosolids be equipped with accurate weighing systems. Where weighing equipment is not available the full-load weight must be estimated by an approved weight estimation method[10].

Given liquid spreading will be occurring it is unlikely that stockpiling of biosolids on the site will occur. However, if it was to occur the contractor and the property owner shall allocate suitable unloading areas where safe stockpiling can occur. Stockpiling may be undertaken providing that several management controls are put in place:

- Stockpile areas should be located on the minimum slope possible within the application area but away from any area subject to flooding
- Stockpiles are to be located at least 100m from nearest property boundary
- Stockpiles must not be accessible to livestock

[10] Data Recording & Reporting for Resource Recovery Facilities Guideline, 2022. Available at: https://nre.tas.gov.au/Documents/Guideline%20-%20Data%20Recording%20and%20Reporting%20-%20Resource%20Recovery%20Facilities.pdf

- Stockpiles must not be subject to erosion by wind or rain – if this is found to be occurring biosolids must be applied or the erosion addressed
- Stockpiling is limited to the day of application for biosolids specifically requiring incorporation to meet vector attraction reduction requirements
- Biosolids to be stored on site for more than 24 hours must either be:
  - Retained within a bunded storage area constructed and maintained to contain the first hour of a 1 in 20 rainfall event: or
  - On a site where it can be reasonably demonstrated that surface runoff or contaminants leaching into the groundwater will not be problematic.

Consideration will need to be given to accommodate delivery and unloading during wet weather. Should the roads and unloading areas be unsuitable, deliveries should be postponed.

Provision of washdown equipment for use on trucks and bins must be made available to ensure compliance with the hygiene requirements of the Controlled Waste Transporter permit. Washdown water should be added to either biosolid stockpiles or planned spreading areas and not run off into drains or streams.

7.4 BIOSOLIDS APPLICATION METHOD

The biosolids will be spread within 24 hours of delivery, unless express permission is granted by the landowner to stockpile them for longer and potential run off can be contained. Weather predictions will be considered when making decisions about transport, unloading and spreading.

The trained operator shall calibrate the spreader for the identified application rate. Ongoing calibration checks and adjustments need to be made as required. Records of calibrations, ground speed and overall operations to maintain the target application rates have to be kept. It has to be considered that wetter material may have a larger spread width and as such vehicle speed will need to be reduced. It is the responsibility of spreading contractor to ensure all operators are adequately trained and follow specific work safety measures when operating spreading machinery. Training records must be kept for each operator.

The spreading equipment cannot operate on steep (slope >15%), waterlogged (saturated) or rocky terrain.

7.5 BIOSOLIDS APPLICATION CONTROLS

Management of biosolids once delivered to site are to be consistent with the requirements of the Biosolid Application Controls detailed in the TBRG (Table 11.2). Relevant sections are reproduced in Table 7-2 below. Where additional controls are to be employed or if further detail is provided in this BMP, this is referenced.

It is noted that the first preference is for biosolids to be stored on a biosolids production or processing site in the first instance, rather than the application site.

Table 7-2: Biosolids application controls (TBRG Table 11.2)

PRACTICE	MANAGEMENT
Signage	Any area used for stockpiling or biosolids application must have adequate signage installed on appropriate gates and fence lines to ensure the public is aware of the risk and prevent public accessing the area. Advice on appropriate signage may be obtained from Public and Environmental Health Services. See Section 7.5.2 for identified signage.
Stockpiling dewatered biosolids on application sites (unlikely to be applicable for liquid spreading)	▪ Stockpile areas should be located on the minimum slope possible within the application area but away from any area subject to flooding ▪ Stockpile must be located at least 100m from the nearest property boundary ▪ Stockpiling and/or unloading areas shall not be located within 250m of an off-farm residence ▪ Stockpile must not be accessible to livestock

PRACTICE	MANAGEMENT
	▪ Stockpile must not be subject to erosion by wind or rain – if this is found to be occurring biosolids must be applied or erosion addressed – Stockpiling is limited to the day of application for biosolids specifically requiring incorporation to meet vector attraction reduction requirements (TRBG Table 8.1) ▪ Biosolids to be stored on-site for more than 24 hours must either be: – Retained within a bunded storage area constructed and maintained to contain the first hour in a 1 in 20-year rainfall event; or – On a site where it can be reasonably demonstrated that surface run-off or groundwater will not be problematic ▪ To ensure excessive quantities of biosolids do not accumulate on an application site, biosolids should not be stored for more than 90 days. An exception may be made during winter months on the proviso that the biosolids are stored within a bund and those biosolids must be used in the upcoming growing season ▪ For bunded storage areas: – Surface water diversion is required to prevent the entry of overland flow into the bunded area, and – A drainage collection point should be located within the bund, but separated from the stored biosolids, and collected drainages should be applied to the application site.
Incorporation of biosolids	Biosolids should be incorporated wherever possible (e.g. applied to land about to be cultivated, or direct injected as a liquid). However, many forms of biosolids (e.g. dried, lime amended) are suited to surface application without incorporation, and management practices (e.g. biosolids treatment, withholding periods, buffer zones) can be used to minimise the risk of off-site impacts and vector attraction. In all cases, reasonable judgement should be exercised with respect to the appropriate application and incorporation requirements for the biosolids and site in question.
Repeat application and soil pH adjustment	Following application, soil pH should be maintained above pH 5.5 to minimise migration of nutrients and contaminants into groundwater. Prior to repeat biosolids application soil sampling must be completed to verify soil pH.
Weather patterns and seasonality	All biosolids application should be scheduled to preceding, present and forecast weather conditions, with particular emphasis on avoiding likely rainfall events. Consideration should be given to whether wind conditions will increase the likelihood of dust and odour being carried beyond buffer zones. Winter application of biosolids should be avoided where possible due to low nutrient uptake.

7.5.1 WIND STRENGTHS AND DIRECTION

Wind has the potential to move odours offsite. The spreading contractor, in conjunction with the property owner/manager, shall consider meteorological data of prevailing winds with local knowledge of terrain effects to exclude spread areas from certain areas of the property and increase the buffer zones in Table 7-1 where required.

Prevailing wind is from the northeast, see Figure 7-1.

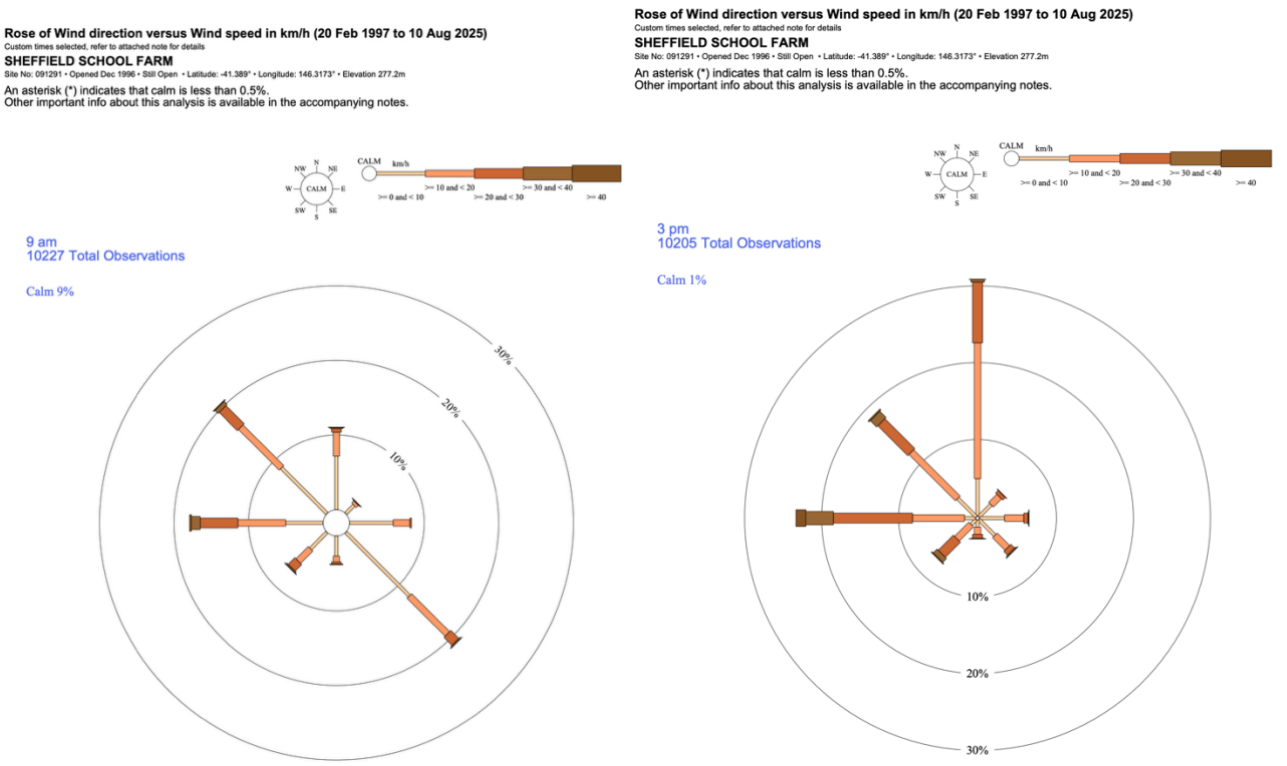

Figure 7-1: Annual mean 9am and 3pm wind rose for Sheffield Farm School (BoM site number 091291), 1997 to 2025. This is the closest weather station with wind direction data.

7.5.2 SIGNAGE

Appendix 2 provides a visual of the signage that will be used on site. Signage is in line with regulatory requirements.

7.5.3 OCCUPATIONAL HEALTH AND SAFETY

Biosolids can contain pathogens. Personnel involved with reuse activities shall be trained and:

- Always wash hands before eating, drinking, or smoking
- Cover cuts and abrasions with waterproof dressings. If an infection occurs, then see a doctor immediately
- Do not eat or drink while working with biosolids
- Protective clothing, including eye and dust protection (masks where appropriate) must be worn when working with biosolids
- Promptly clean body areas that become in contact with biosolids.

All site visitors and contractors are to be informed of the above and have access to appropriate safety equipment and washing facilities.

Signage shall be used to inform the public on the risks of entry (see Section 7.5.2).

7.5.4 COMPLAINTS

All complaints by the public are to be investigated immediately by TasWater and recorded in both TasWater and the spreading contractor's incident recording system. All investigations shall address the following questions at a minimum:

- What is the nature of the complaint
  - Odour, noise, environmental, visual?

- What are the times and duration of the activity causing concern
  - Is it a one off or has it been constant?
- Have there been environmental or weather conditions that may be contributing?
  - Hot/cold weather, wind direction, rainfall
- Are there any non-compliance events that may be contributing?
  - Have buffer zones been observed?
  - Are all biosolids delivered to site verified as Grade B?
  - Is stock being excluded from spread areas?
  - Are delivery vehicles being operated safely?
- Is the complaint potentially vexatious or are there vested interests at play?
- Has the complainant been consulted previously?
  - Do they understand the activity, the duration, location, management measures?
- Are others affected?
  - If so, what is their experience?
- What mitigation measures can be employed?
  - Cultivation of spread areas
  - Cease spreading in a particular area
  - Dust suppression on access roads
- What corrective actions were performed?
- Have the corrective actions been effective?
  - Is the original complainant satisfied with the outcomes?
  - Have internal inspections and audits indicated the situation is resolved?
- Do management methods need changing to prevent a recurrence and what should be changed?

7.5.5 WITHHOLDING PERIODS FOR BIOSOLIDS APPLICATION

Table 7-3 details the minimum crop withholding periods for biosolids as per the TBRG.

Table 7-3: Minimum crop restrictions for Class 2 biosolids application (TBRG Table 10.1)

PRACTICE	MANAGEMENT
Human food crop	For crops which may be eaten raw, and where harvested parts are close to the soil surface (e.g. lettuce, beetroot, cauliflower, cabbage), planting must be delayed for 18 months after biosolids application. For crops which may be eaten raw, and where harvested parts are below the soil surface (e.g. carrots, potatoes), planting must be delayed for 5 years after biosolids application. In all other cases (i.e. food crops where the harvested product is not in contact with the ground such as apples and wheat), the crop must not be harvested for 30 days after biosolids application. Windfalls (e.g. orchards) must not be collected for 12 months after the biosolids application, unless further processing involving pasteurisation (e.g. canned fruit) occurs.
Animal feed and fibre crops	Must not harvest for 30 days after biosolids application.
Pasture and fodder crops	Animals must not have access to stockpiles of biosolids. Animals must not have access to or be grazed on the site for at least 30 days after biosolids application. Poultry, pigs and other rooting livestock must not be grazed on biosolids application or storage areas as feeding habits of these animals can result in high levels of soil ingestion. Exclusion is preferable but a withholding period of 3 years applies. The Producer must maintain a register of all properties which receive biosolids to grazing land or produce animal fodder for cattle or pigs and make this register available to the Chief Veterinary Officer on request.
Turf	Turf grown on land to which biosolids has been applied must not be harvested for 12 months after biosolids application.

For any additions to the above, it is the landowner's responsibility to ensure that where biosolids are utilised ahead of saleable crops being grown, this practice is acceptable to the purchaser of the crop and adheres to Food Safety Standards.

Livestock Withholding

Table 7-3 details restrictions for animals grazing on pasture. The restrictions are consistent with other requirements for managing pathogen risks to livestock such as Bovine Spongiform Encephalopathy (BSE) and scrapie. *The Australian Ruminant Feed Ban guidelines* (2018) give additional guidance on acceptable measures to minimise the risk of ruminant ingestion of RAM material. In practice this generally means that there shall be no visible biosolids remaining in the grazing area prior to re-entry of stock; in extended dry periods or low-growth periods, this may exceed the minimum 30-day duration shown in Table 7-3.

Biosolids may remain visible on the surface (and accessible to stock) for longer than 30 days after application in circumstances such as the following:

- Spreading equipment or physical characteristics of the biosolids have led to uneven distribution of material during spreading (e.g. biosolids are in 'clumps')
- Cold and/or dry weather has reduced the growth of pasture
- Dry conditions have prevented weathering and infiltration of the biosolids into the soil.

Before stock are allowed entry into a paddock where biosolids have been spread a visual inspection must be carried out to ensure no clumps or streaks of biosolids remain and the field appears uniform and clean.

Visual check method:

- Divide the paddock into a grid
- Take photos after spreading has occurred and then photos when doing the visual inspection to document the change
- Walk or drive paddock slowly before the end of the withholding period and visually inspect for any remining biosolids residue inspecting each section of the grid systematically
- If incorporated, check biosolids were incorporated into the soil within 48 hours.

In circumstances where there is still residual biosolids, a longer re-entry period would be required until no biosolids are visible on the pasture's surface. TasWater is the responsibility entity for the biosolids, it therefore is their responsibility to ensure the landholder is aware of their requirements around withholding periods after biosolids application to limit the risk of livestock being exposed to RAM.

Cysticercosis (Beef Measles)

Cysticercosis can occur in cattle due to infection from the *Taenia saginata* parasite.

There is currently an unquantified link associated with cattle grazing on land spread with biosolids and the transmission of Cysticercosis. Whilst the risk is believed to be low, the Tasmanian Chief Veterinary Officer (CVO) has been considering the reporting requirements for cattle grazed on land that has had biosolids applied. This assessment has been occurring for several years. Should any formal advice be provided by the Tasmanian Chief Veterinary Officer, consideration would have to be given to changes in biosolid applications in response to this advice.

7.5.6 GENERAL BIOSECURITY DUTY

Biosecurity is a set of measures designed to protect a property, the health of crops (including forestry), animals and their environment from the entry and spread of pests, diseases, pathogens, and weeds, as well as harmful contaminants. Biosecurity is the landholder's responsibility, and that of every person visiting or working on a property.

Tasmania has a comprehensive biosecurity protection system, underpinned by the *Biosecurity Act 2019*. This Act introduces in Tasmania a legal obligation known as the **General Biosecurity Duty** – or GBD. The underlying principle with the new GBD is that it is relatively easy to prove a breach of duty. For example, if a contractor doesn't wash down their vehicle prior to entering a property (or there is no record of actions) and weeds turn up in that location, then the contractor can be shown to have breached their duty. The GBD provides a legal framework to ensure that companies and individuals are reducing the biosecurity risks with the activities they are undertaking.

Breaches of biosecurity and the subsequent introduction or spread of weeds, pests, diseases, or contaminants can have significant economic impact on individual farmers and on yields, produce quality and marketability (at a regional, State, and national scale). Some farms which already have endemic biosecurity risks will have containment and management responsibilities, to prevent spread across their own farm, or on to others.

If the farm has a biosecurity plan in place, all persons involved in the biosolids spreading activity coming onto site must follow the biosecurity plan. If there is no official plan in place, then general biosecurity practices as identified on the Biosecurity Tasmania website must be followed.

7.6 RECORD KEEPING

TasWater, the spreading contractor and the landowner/manager are required to maintain accurate records that capture:

- Origin and quantities of biosolids and dates delivered and spread
- Land areas where the biosolids were applied including evidence that buffer distances have been adhered to
- Application rates
- All information necessary to verify application rates and compliance with approvals
- Details of any incidents
- Details of any complaints and corrective action undertaken.

All records are to be kept for a minimum of 5 years.

References

Commonwealth of Australia (2025). PFAS National Environmental Management Plan (NEMP) 3.0. Australian Government, Canberra, Australian Capital Territory

Environment Protection Authority (2020) Tasmanian Biosolids Reuse Guidelines, Environment Protection Authority, Hobart, Tasmania.

Environment Protection Authority (2020) Approved Management Method for the Reuse of Biosolids, Environment Protection Authority, Hobart, Tasmania.

Meander Valley Council (2021), Tasmanian Planning Scheme – Meander Valley

Appendix 1: Maps

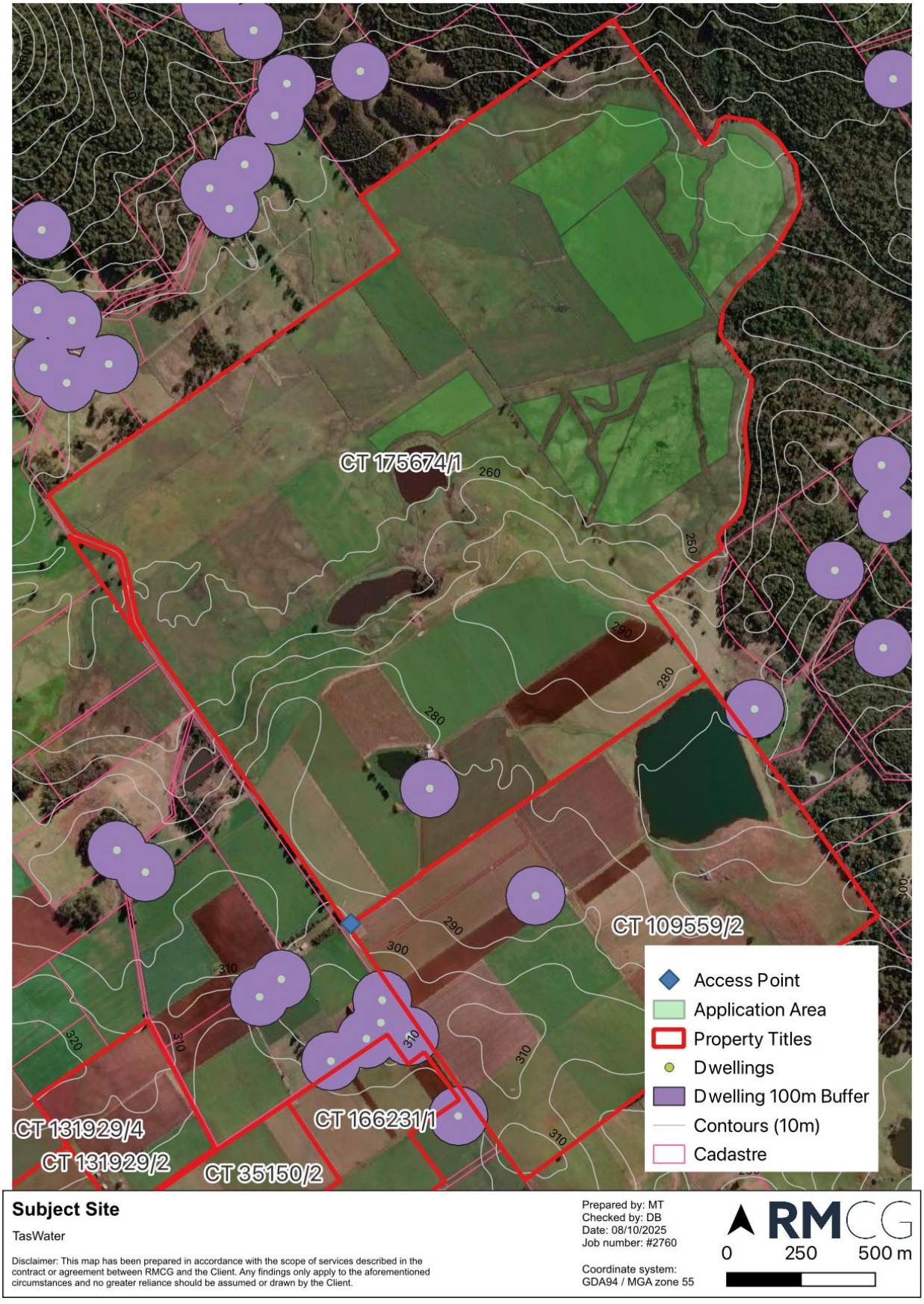

Figure A1-1: Subject site with application areas and surrounding dwellings

Figure A1-2: Application areas

Appendix 2: Biosolids application signage

Figure A2-1: A4 Biosolids signage example

Figure A2-2: A3 Biosolids signage example

Appendix 3: Further soil results

Table A3-1: Potassium (Available)

ZONE	AVAILABLE K (MG/KG)	RATING
LOR	10	
13 & 14	240	Optimum
Stonehouse East	210	Optimum
Stonehouse North, North	200	Optimum
Stonehouse North, South	170	Low
Stonehouse South, East	240	Optimum
Stonehouse South, West	190	Optimum

Table A3-2: Potassium (Exchangeable)

ZONE	EXCHANGEABLE K (CMOL/KG)	RATING
LOR	0	
13 & 14	0.61	Moderate
Stonehouse East	0.54	Moderate
Stonehouse North, North	0.50	Moderate
Stonehouse North, South	0.41	Moderate
Stonehouse South, East	0.59	Moderate
Stonehouse South, West	0.49	Moderate

Table A3-3: Calcium (Exchangeable)

ZONE	EXCHANGEABLE CA (CMOL/KG)	RATING
LOR	0	
13 & 14	17	High
Stonehouse East	9.3	Moderate
Stonehouse North, North	9.5	Moderate
Stonehouse North, South	7.8	Moderate
Stonehouse South, East	6.9	Moderate
Stonehouse South, West	6.2	Moderate

Table A3-4: Magnesium (Exchangeable)

ZONE	EXCHANGEABLE MG (CMOL/KG)	RATING
LOR	0	
13 & 14	7.6	High
Stonehouse East	2.6	Moderate
Stonehouse North, North	4.3	High
Stonehouse North, South	1.2	Moderate
Stonehouse South, East	1.3	Moderate
Stonehouse South, West	1.9	Moderate

Table A3-5: Sodium (Exchangeable)

ZONE	EXCHANGEABLE NA (CMOL/KG)	RATING
LOR	0	
13 & 14	0.26	Low
Stonehouse East	0.11	Low
Stonehouse North, North	0.20	Low
Stonehouse North, South	0.07	Very low
Stonehouse South, East	0.08	Very low
Stonehouse South, West	0.13	Low

Table A3-6: Exchangeable potassium & calcium (%)

ZONE	POTASSIUM (%)	RATING	CALCIUM (%)	RATING
LOR	0		0	
13 & 14	2.4	Ideal	66	Ideal
Stonehouse East	4.3	Ideal	74	Ideal
Stonehouse North, North	3.4	Ideal	66	Ideal
Stonehouse North, South	4.3	Ideal	83	Not Ideal
Stonehouse South, East	6.7	Not Ideal	78	Ideal
Stonehouse South, West	5.5	Not Ideal	69	Ideal

Table A3-7: Exchangeable magnesium & sodium (%)

ZONE	MAGNESIUM %	RATING	SODIUM %	RATING
LOR	0		0	
13 & 14	30	Not Ideal	1.00	Not Ideal
Stonehouse East	21	Not Ideal	0.90	Ideal
Stonehouse North, North	30	Not Ideal	1.40	Not Ideal
Stonehouse North, South	12	Ideal	0.72	Ideal
Stonehouse South, East	15	Not Ideal	0.89	Ideal
Stonehouse South, West	21	Not Ideal	1.40	Not Ideal

Table A3-8: Exchangeable cations (Cations Exchange Capacity, CECe)

ZONE	CECe (CMOL/KG)	RATING
LOR	0	
13 & 14	25.30	High
Stonehouse East	12.50	Moderate
Stonehouse North, North	14.50	Moderate
Stonehouse North, South	9.48	Low
Stonehouse South, East	8.89	Low
Stonehouse South, West	9.00	Low

Table A3-9: Ca/Mg ratio

ZONE	CA/MG (CMOL/KG)	RATING
LOR	0	
13 & 14	2.2	Ca Low
Stonehouse East	3.6	Ca Low
Stonehouse North, North	2.2	Ca Low
Stonehouse North, South	6.5	Mg Low
Stonehouse South, East	5.3	Balanced
Stonehouse South, West	3.3	Ca Low

Table A3-10: K/Mg ratio

ZONE	K/MG (CMOL/KG)	RATING
LOR	0	
13 & 14	0.08	Ideal
Stonehouse East	0.21	Ideal
Stonehouse North, North	0.12	Ideal
Stonehouse North, South	0.34	Ideal
Stonehouse South, East	0.45	Ideal
Stonehouse South, West	0.26	Ideal

Table A3-11: Extractable trace metals (DTPA)

ZONE	EXTRACTABLE COPPER (MG/KG)	EXTRACTABLE ZINC (MG/KG)	EXTRACTABLE MANGANESE (MG/KG)	EXTRACTABLE IRON (MG/KG)
LOR	0.2	0.2	1.0	1.0
13 & 14	2.60	3.0	57	160
Stonehouse East	2.20	1.9	78	120
Stonehouse North, North	3.10	7.8	68	220
Stonehouse North, South	0.71	3.9	30	170
Stonehouse South, East	0.59	4.7	25	300
Stonehouse South, West	1.80	1.5	26	380

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