Bromelton Compost Manufacturing Facility

State Development Area Application Town Planning Report

SOILCO Pty Ltd

11 October 2024

→ The Power of Commitment

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[Compliance statement]

Executive summary

GHD Pty Ltd was engaged by SOILCO Pty Ltd to obtain primary approvals to develop and operate a Compost Manufacturing Facility in the Bromelton State Development Area. This Town Planning Report has been prepared to support a State Development Area Material Change of Use Application that has been prepared in accordance with Section 77 the *State Development and Public Works Organisation Act 1971*.

The Compost Manufacturing Facility (Bromelton CMF) is to be situated in South-east Queensland at 260 Mitchell Road, Bromelton, formally known as Lot 4 on SP85497 (the 'subject site'). The Bromelton CMF Project will involve the construction and operation of a facility for the receipt, processing, composting, and storage of the following materials: garden, food, wood wastes, manures and soil for the sale and distribution of finished compost, mulch and soil products. SOILCO Pty Ltd (referred to as SOILCO) will design, construct and operate the Bromelton CMF Project.

To support the operation of the Bromelton CMF, the Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road will be upgraded to provide for safe and efficient access to and from the site. SOILCO is addressing a separate approval with TMR for the intersection works. In addition, Mitchell Road will be upgraded to facilitate the access to the subject site. Scenic Rim Regional Council have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from Scenic Rim Regional Council (SRRC) for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network.

A number of technical reports were completed to determine and understand the potential environmental impacts from the construction and operation of the proposed Bromelton CMF.

The key potential impacts to the surrounding environment from the activities associated with the construction and operation of the Bromelton CMF are outlined below:

– Sensitive receivers:
  - Odour from composting activities during operation of the Bromelton CMF.
  - Noise nuisance from composting activities during operation of the Bromelton CMF.
  - Occupational health and safety risk from dust during operation.
  - Human health risk from potential contaminants (pathogens) present in feedstocks.
  - Increased traffic during construction of the Bromelton CMF on local road network.
– Biodiversity:
  - Removal of dispersal habitat for the koala.
  - Removal of foraging habitat for the grey-headed flying fox.
– Water
  - Leachate and stormwater runoff entering waterways during the construction and operation phase of the project.
  - Impacts to drainage features during the construction phase.
– Cultural heritage
  - Disturbance of potential Indigenous cultural heritage artefacts on the subject site.

For the identified environmental impacts, a risk assessment was conducted, with all risks given a mitigation measure and a residual risk rating.

The relevant authorities have been engaged with to help inform design and delivery of the proposed CMF including:

– Department of Transport and Main Roads
– Department of Environment, Science and Innovation

– Department of Agriculture and Fisheries
– Department of Regional Development and Water
– Department of Resources
– Seqwater
– Scenic Rim Regional Council

The Bromelton CMF Project aligns with objectives in the Queensland Government Queensland Organics Strategy 2022–2032 by reducing the amount of organic waste going to landfill and it will offer economic and social benefits through employment and local business opportunities in South-east Queensland. The proposal will provide large-scale organics processing infrastructure assets to serve Queensland Councils, commercial waste generators and local communities. The Bromelton CMF will be critical in assisting South-east Queensland to achieve ambitious recycling targets and counter the financial impact of rising landfill levies, as well as contributing in the transition to a circular economy approach. The company has been a circular economy pioneer since 1985 and has the know how to design and operate a benchmarking composting facility that keeps resources circulating at their highest value.

The Bromelton CMF is considered appropriate for the subject site for the following reasons:

– The proposal complies with the intent of the relevant State interests
– The proposal is an appropriate land use outcome outside the priority living area under the South-east Queensland Regional Plan
– The proposed development is consistent with the Planning Scheme's intent
– The proposal complies with the strategic intent, objectives and assessment criteria of the Development Scheme.

The Bromelton CMF will be constructed and operated in a manner that avoids adverse environmental impacts on the surrounding environment. It is recommended that the OCG support the SDA application with reasonable and relevant conditions.

Contents

Executive summary i

1. Introduction 1

1.1 Purpose of this report 1

1.2 Scope and limitations 1

1.3 Overview of the applicant 1

1.4 Project overview 3

1.5 Terminology 7

1.6 Overview of approvals 9

1.6.1 Commonwealth 9

Environment Protection and Biodiversity Act 1999 9

1.6.2 State 9

State Development Public Works Organisation Act 1971 and Bromelton State Development Area Development Scheme 9

Environmental Protection Act 1994 9

Planning Act 2016 10

Aboriginal Cultural Heritage Act 2003 10

Land Act 1994 10

Vegetation Management Act 1999 10

Fisheries Act 1994 10

Water Act 2000 11

Environmental Offsets Act 2014 11

1.7 Supporting technical studies 15

2. Summary of application details 18

3. Site characteristics 19

3.1 Overview 19

3.2 Current and surrounding land use 19

3.3 Existing infrastructure 21

3.3.1 Service infrastructure 21

3.3.2 Roads, access and parking 21

3.4 Existing environmental values associated with the subject site 22

3.4.1 Topography, soils and landform 22

3.4.2 Groundwater 23

3.4.3 Terrestrial ecological values 24

3.4.4 Aquatic ecological values 29

3.5 Cultural heritage 30

3.6 Community values 30

4. Project description 32

4.1 Facility overview 32

4.2 Site infrastructure 34

4.3 Site infrastructure description 37

4.3.1 Site access (entry and exit) 37

4.3.2 Office, amenities and parking 37

4.3.3 Receival building and decontamination 37

4.3.4 Forced aeration pad – ASP 38

4.3.5 Passive open windrow pad 38

4.3.6 Maturation, manufacturing and distribution area 39
4.3.7 Workshop and fuel storage area 39
4.3.8 Surface water and leachate management 39
4.3.9 Freshwater storage dam 39
4.3.10 Fire services area 42
4.3.11 Electricity supply 42
4.3.12 Residual waste management 42
4.3.13 Wastewater management 42
4.3.14 Stormwater management 42
4.4 Site construction 43
4.4.1 Construction 43
4.5 Site operations 45
4.5.1 Description of Environmentally Relevant Activities (ERAs) associated with the Project 45
4.5.1.1 ERA 33 Crushing, milling, grinding or screening 45
4.5.1.2 ERA 53(a) Organic material processing 45
4.5.1.3 ERA 54(2)c – Mechanical waste reprocessing 46
4.5.2 Facility input material and composting processes 47
4.5.2.1 Material throughput 47
4.5.2.2 Material types 47
4.5.2.3 Composting process 49
4.5.3 Pre-treatment 52
4.5.4 Composting process – ASP 52
4.5.5 Composting process GO – open windrow 53
4.5.6 Maturation, product manufacturing and distribution 54
4.5.7 Water balance 55
4.5.8 Surface water and leachate management 55
4.5.9 Residual waste management 58
4.5.10 Greenhouse gas emissions 58
4.5.11 Hours of operation 60
4.5.12 Staff numbers 60
4.6 Plant and equipment 60
4.7 Justification for the locations of the CMF 61
5. Impacts and mitigation measures 63
5.1 Risk ratings 63
5.2 Construction impacts and mitigation 64
5.2.1 Land 65
5.2.2 Air 79
5.2.3 Noise and vibration 81
5.2.4 Water 84
5.3 Operation impacts and mitigations 86
5.3.1 Land 87
5.3.2 Air 95
5.3.3 Noise and vibration 97
5.3.4 Water 99
6. Statutory planning framework 102
6.1 Environment Protection and Biodiversity Conservation Act 1999 102
6.2 State Development and Public Works Organisation Act 1971 102
6.3 Bromelton State Development Area Development Scheme 103
6.4 State Planning Policy 2017 105

6.5 ShapingSEQ 2023 109
6.6 Seqwater Development Guidelines 110
6.7 Scenic Rim Planning Scheme 110
6.7.1 Zoning 110
6.7.2 Local Plan 111
6.7.3 Overlays 111
7. Stakeholder/community engagement and pre-lodgement discussions 116
8. Public notification 123
9. Conclusion 125
10. References 126

Table index

Table 1.1 Drawings and 3D images references of Bromelton CMF 3
Table 1.2 Report terminology definitions 7
Table 1.3 Abbreviations list 7
Table 1.4 Supporting technical studies 15
Table 2.1 Summary of application details 18
Table 3.1 Subject site tenure 19
Table 3.2 Existing infrastructure 21
Table 3.3 Major soils occurring in the Project area 23
Table 3.4 Summary of aquifer properties for the geological units near the site (Groundwater database data) 24
Table 3.5 Terrestrial national, state and local ecological values 24
Table 3.6 Aquatic national, state and local ecological values 29
Table 3.7 In-situ water quality results 30
Table 4.1 Key development aspects 32
Table 4.2 Proposed infrastructure list 34
Table 4.3 Proposed surface water quality management measures 43
Table 4.4 Standard construction hours 44
Table 4.5 Proposed construction equipment 44
Table 4.6 Annual breakdown of GO and FOGO processed across a year 47
Table 4.7 Odour rating of composting feedstock (ERA 53(a)) – Organic material processing by composting 47
Table 4.8 Estimated water usage 55
Table 4.9 Proposed hours of operation 60
Table 4.10 Proposed staff numbers 60
Table 4.11 Equipment location and function 60
Table 5.1 Risk Matrix 63
Table 5.2 Consequence description 63
Table 5.3 Likelihood descriptors 63
Table 5.4 Construction impacts and mitigations for land 66
Table 5.5 Construction impacts and mitigation measures for air 79
Table 5.6 Construction impacts and mitigation measures for noise and vibration 81
Table 5.7 Construction impacts and mitigation measures for water 84

Table 5.8	Operational environmental impacts and mitigations for land	87
Table 5.9	Operational environmental impacts and mitigation measures for air	95
Table 5.10	Operational environmental impacts and mitigation measures for noise and vibration	97
Table 5.11	Operational environmental impacts and mitigation measures for water	99
Table 6.1	Assessment Against the Strategic Visions for the Bromelton SDA	103
Table 6.2	State interests relevant to the Project	105
Table 6.3	Overlays relevant to the Project	111
Table 7.1	Summary of stakeholder/community engagement and pre-lodgement discussions	117
Table 8.1	Factors for consideration in requiring public consultation	123

Figure index

Figure 1.1	Proposed subject site	2
Figure 1.2	3D render - Site view from Mitchell Road	4
Figure 1.3	3D render - Site entry	4
Figure 1.4	3D render - Maintenance and storage shed	5
Figure 1.5	Bromelton CMF Layout	6
Figure 1.6	Earthwork overall layout	13
Figure 1.7	Water features in Project Area	14
Figure 3.1	Surrounding land use	20
Figure 3.2	Contour mapping (Source: Scenic Rim Planning Scheme interactive mapping)	22
Figure 3.3	Essential habitat areas, core koala habitat areas, MSES wildlife habitat within the Project area	26
Figure 3.4	Regional ecosystems mapping and Regional ecosystems within the defined distance of a watercourse	27
Figure 3.5 Flora survey effort and results		28
Figure 4.1	Internal road layout for Bromelton CMF	36
Figure 4.2	Example of sorting, shredding and screening equipment for decontamination and size reduction of material prior to composting	38
Figure 4.3	Stormwater flow layout Bromelton CMF	41
Figure 4.4	Proposed composing processes	51
Figure 4.5	Proposed composting flow chart	51
Figure 4.6	Decontamination line	52
Figure 4.7	A forced aeration system to be utilised for ASP composting of organic waste materials	53
Figure 4.8	A forced aeration system to be utilised for ASP composting of organic waste materials	53
Figure 4.9	Open windrow turner and piles	54
Figure 4.10	Proposed leachate and stormwater management	57
Figure 4.11	Greenhouse gas emissions from each stage of operation	59
Figure 4.12	Constraints mapping for the Bromelton CMF	61
Figure 6.1	ShapingSEQ 2023 – Land use categories (Source: Development Assessment Mapping System)	109
Figure 6.2	Zoning map (Source: Planning Scheme)	111

Appendices

Appendix A	Development Plans
Appendix B	CMF Process Flow Diagram
Appendix C	Landowner's consent
Appendix D	SDA Code Compliance
Appendix E	State Code Compliance
Appendix F	Seqwater Development Guidelines Compliance
Appendix G	Ecological Assessment – Terrestrial Ecology Assessment and Aquatic Ecology Assessment
Appendix H	Waste Management Plan
Appendix I	Traffic Impact Assessment for the Construction phase
Appendix J	Traffic Impact Assessment for the Operational phase
Appendix K	Environmental Management Plan
Appendix L	Air Quality Impact Assessment
Appendix M	Visual Impact Assessment
Appendix N	Surface Water Impact Assessment
Appendix O	Noise Impact Assessment
Appendix P	Groundwater Assessment
Appendix Q	Bushfire Hazard Assessment and Management Plan
Appendix R	Cultural Heritage Assessment
Appendix S	Slope Stability Report
Appendix T	Energy Concept Report
Appendix U	Site and Soil Evaluation Report
Appendix V	Stakeholder engagement report

1. Introduction

1.1 Purpose of this report

SOILCO Pty Ltd (SOILCO) proposes to develop and operate a Compost Manufacturing Facility (CMF) in South East Queensland in Bromelton (the Project). The Project is located within the Bromelton State Development Area (SDA) over a greenfield site purchased by SOILCO at 260 Mitchell Road, Bromelton, formally known as Lot 4 on RP85497 (the subject site). Refer to Figure 1.1.

SOILCO has engaged GHD Pty Ltd (GHD) to obtain the primary approvals for the Project. This Town Planning Report has been prepared in support of an SDA application seeking a material change of use (MCU) development permit for a special industry within the Special Industry Precinct of the Bromelton SDA[1]. This SDA application has been prepared in accordance with the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and the *Bromelton SDA Development Scheme* (2017) (Development Scheme). Its aim is to assist the Coordinator-General (OCG) and relevant referral agencies in the assessment of the application. The following information is provided in this report:

– Section 1 – Introduction
– Section 2 – Summary of application details
– Section 3 – Site characteristics
– Section 4 – Project description
– Section 5 – Development assessment
– Section 6 – Statutory considerations
– Section 7 – Pre-lodgement discussions
– Section 8 – Public notification
– Section 9 – Conclusion.

1.2 Scope and limitations

This Planning Report was prepared by GHD in performing services under the Service Provider Agreement dated 14 February 2024 between GHD and SOILCO (the Contract). The report does not amend the Contract or take away from the rights or obligations of SOILCO and GHD under the Contract or in respect of the standard and quality of the services performed under the Contract. If there is any inconsistency between the Contract and this report, the Contract prevails to the extent of the inconsistency.

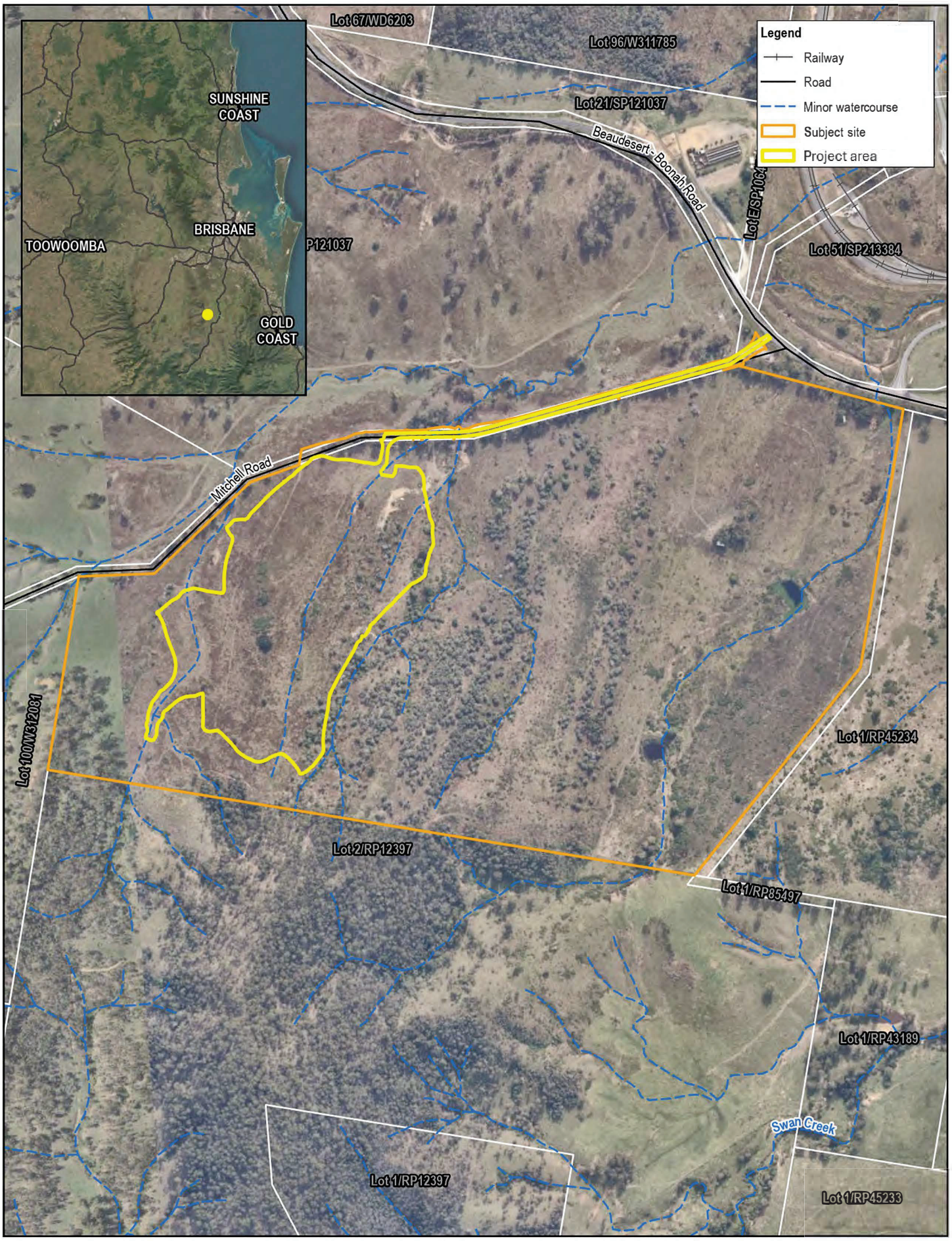
The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report. GHD has prepared this report on the basis of information provided by SOILCO and others who provided information to GHD (including Government authorities), which GHD has not 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. GHD disclaims liability arising from any of the assumptions being incorrect.

1.3 Overview of the applicant

SOILCO is an Illawarra-based company established in 1982, with its head office located in Kembla Grange, New South Wales (NSW). SOILCO is a producer of organic soil improvers, manufacturing a range of soil, compost and mulch products. SOILCO specialises in the processing of organic waste and has extensive experience constructing and operating composting facilities and organics processing facilities with four approved and licensed facilities in NSW.

[1] As per correspondence with the OCG, the land use definition is to be confirmed once the SDA application is received.



Paper Size ISO A4

0 50 100 150 200

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

GHD

SOILCO
The Life-Giving Soil Company

SOILCO Pty Ltd
Bromelton Compost Manufacturing Facility
Terrestrial Ecology Assessment

Project No. **12626213**
Revision No. **A**
Date **14/08/2024**

Proposed subject site

FIGURE 1-1

\\ghdnet\GHD\AU\Brisbane\Projects\41\12626213\GIS\Maps\Deliverables\12626213_BromeltonCompostManufacturingFacility\12626213_BromeltonCompostManufacturingFacility.aprx - 12626213_101_ProjectFootprint_RevA
Print date: 14 Aug 2024 - 17:08

Data source: DoR: rail, watercourse (2023), cadastre (2024), road (2021); SoilCo: project area (2024); World Imagery: Earthstar Geographics public/NSW_POI: © Department of Finance, Services & Innovation 2018 nearmap.com: extracted 14/08/2024 . Created by: mvandermerwe

1.4 Project overview

SOILCO has designed the CMF layout based on industry best practices and their extensive experience with similar facilities (refer to Figure 1.2, Figure 1.3, Figure 1.4, and Figure 1.5). The design optimally incorporates current site conditions to enhance operational efficiency. For a better understanding of the project design, refer to the drawings and 3D views included in Appendix A, listed in Table 1.1.

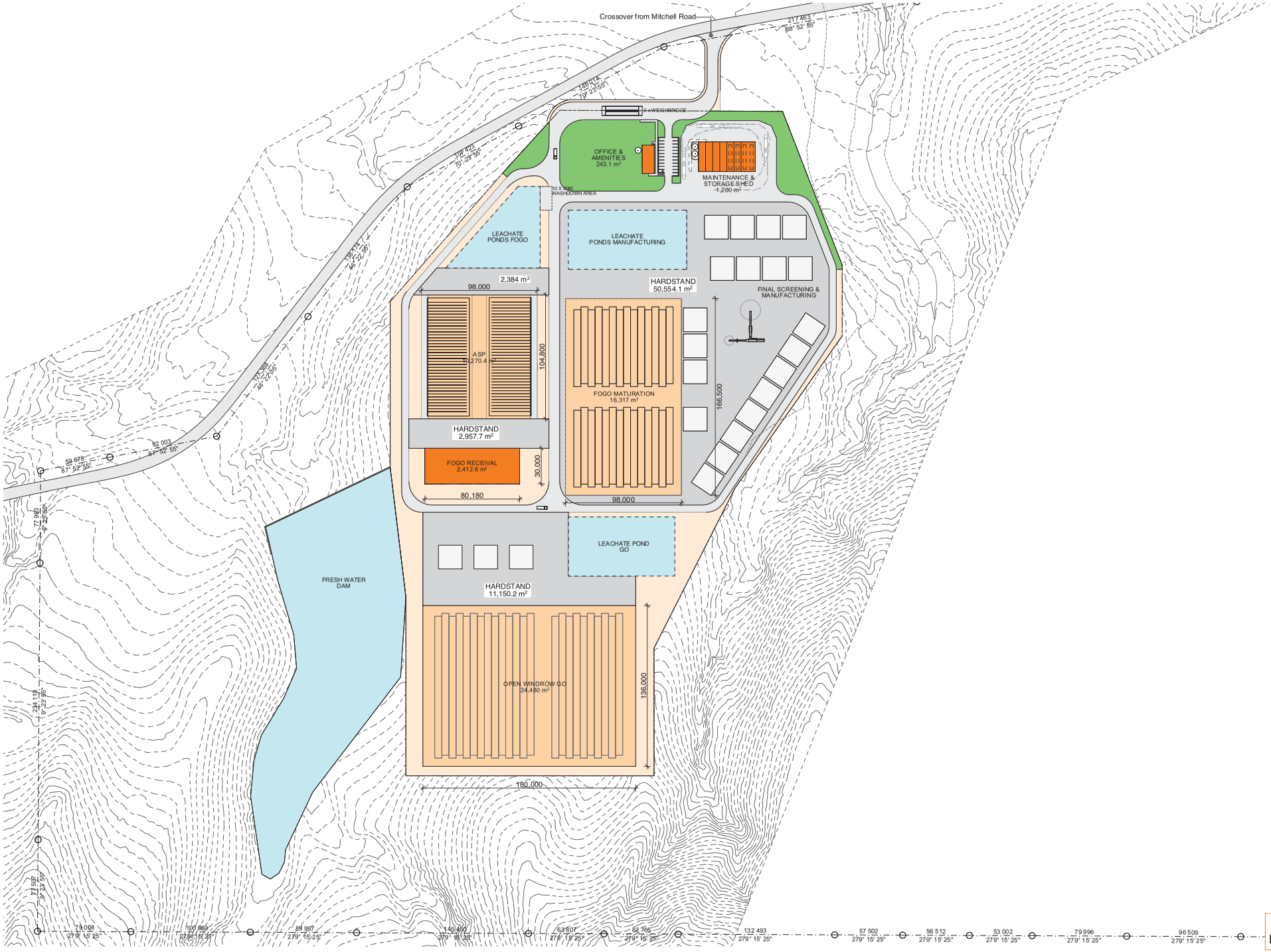
Table 1.1 Drawings and 3D images references of Bromelton CMF

ID	Reference	Drawing Name	Drawing Number (Appendix A)	Date
1	Offices and Amenities	Elevations & Sections - Office & Amenities	A-DA-09.01 (RevA)	July 2024
		Floor Plan - Ground - Office & Amenities	A-DA-03.01 (RevA)	July 2024
		Roof - Office & Amenities	A-DA-04.01 (RevB)	July 2024
		3D Views 3	A-DA-22.03 (RevA)	July 2024
2	Maintenance and Storage Shed	Elevations - Maintenance & Storage Shed	A-DA-09.02 (RevA)	July 2024
		Floor Plan - Ground - Maintenance & Storage Shed	A-DA-03.02 (RevA)	July 2024
		Roof - Maintenance & Storage Shed	A-DA-04.02 (RevB)	July 2024
		3D Views 4	A-DA-22.04 (RevA)	July 2024
3	FOGO Receival and Sort Shed	Elevations-FOGO Receival & Sort Shed	A-DA-09.03 (RevB)	July 2024
		Floor Plan - Ground - FOGO Receival & Sort Shed	A-DA-03.03 (RevA)	July 2024
		Roof - FOGO Receival & Sort Shed	A-DA-04.03 (RevB)	July 2024
4	General Site Information	Context & Locality Plans	A-DA-00.01 (RevB)	July 2024
		Proposed Site Plan	A-DA-01.02 (RevA)	July 2024
		3D Views 1	A-DA-22.01 (RevA)	July 2024
		3D Views 2	A-DA-22.02 (RevA)	July 2024
		General Cover Sheet	30034146-000-100 (Rev2)	August 2024
		General Notes	30034146-000-110 (Rev2)	August 2024
		Erosion & Sediment Control Layout	30034146-000-111 (Rev2)	August 2024
		Bushfire Overlay Layout	30034146-000-112 (Rev2)	August 2024
		Flooding Overlay Layout	30034146-000-113 (Rev2)	August 2024
		General Arrangement Layout	30034146-000-114 (Rev1)	August 2024
		Bulk Earthworks Overall Layout	30034146-000-120 (Rev2)	August 2024
		Bulk Earthworks Layout Sheet 1	30034146-000-130 (Rev2)	August 2024
		Bulk Earthworks Layout Sheet 2	30034146-000-131 (Rev2)	August 2024
		Bulk Earthworks Sections	30034146-000-140 (Rev2)	August 2024
		Typical Sections	30034146-000-200 (Rev2)	August 2024
		Services Layout	30034146-000-600 (Rev2)	August 2024
		Vehicle Turning Paths Layout	30034146-000-610 (Rev2)	August 2024
		Stormwater Flow Layout	30034146-000-300 (Rev2)	August 2024

Figure 1.2 3D render - Site view from Mitchell Road

Figure 1.3 3D render - Site entry

Figure 1.4 3D render - Maintenance and storage shed



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Revision

A	Preliminary DA Set	19/07/2024

Project
Bromelton Compost Manufacturing Facility
Lot 4 Mitchell Road Bromelton 4285

Client
SOILCO

Stage
DA

Status
Peliminary
NOT FOR CONSTRUCTION

Architect
GA

Drawn
ZB

Project No.
1384-02

Scale
1:1500 at A1

Figure 1.5 Bromelton CMF Layout

A

P:\Data 1\1384-02 Bromelton Compost Manufacturing Facility\5.2 Development Application\5.2.1 Arch\CAD\1384-02_Site Master SD 27.pln

1.5 Terminology

Terminology used throughout this report is outlined in Table 1.2. Acronyms and abbreviations used in this report are presented in Table 1.3.

Table 1.2 Report terminology definitions

Term	Meaning
Subject site	The entirety of Lot 4 on RP85497
Project area	The Project area represents the direct disturbance footprint for the proposed CMF. The Project area is presented in Figure 1.1.
Study area	Represents the extent of the desktop searches and/or field surveys of the technical studies. Please refer to the relevant technical studies for their approximate buffer around the Project area.
Construction footprint	The 21 ha area where the proposed facility construction activities are planned.
Permanent footprint	The 18.5 ha area where the proposed facility will permanently occupy.

Table 1.3 Abbreviations list

Abbreviation	Meaning/definition
AADT	Average annual daily traffic
AEP	Annual exceedance probability
AHD	Australian Height Datum
APZ	Asset Protection Zones
AQA	Air quality assessment
ARD	Acid rock drainage
ASP	Aerated static pile
BPA	Bushfire prone area
BYDA	Before You Dig Australia
CEMP	Construction Environmental Management Plan
CHL	Channelised left
CHRs	Channelised right turn lane
CMF	Compost manufacturing facility
Council	Scenic Rim Regional Council
DAF	Department of Agriculture and Fisheries
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DESI	Department of Environment, Science and Innovation
Development Scheme	*Bromelton SDA Development Scheme*
DSDSATSIP	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships
DTMR	Department of Transport and Main Roads
EA	Environmental authority
EMP	Environmental Management Plan
EMP (C)	Environmental management Plan (Construction)
EP Act	*Environmental Protection Act 1994*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESCP	Erosion and Sediment Control Plan
FFDI	Forest fire danger index

Abbreviation	Meaning/definition
FOGO	Food organics and garden organics
GFA	Gross floor area
GHD	GHD Pty Ltd
GO	Garden organics
h	height
IECA	International Erosion Control Association
l	litres
m	metres
m^2	metres squared
m^3	Metres cubed
MCU	Material change of use
MLES	Matters of local environmental significance
MNES	Matters of national environmental significance
MOC	Model operating conditions
MSES	Matters of state environmental significance
NMP	Noise Management Plan
NSW	New South Wales
OCG	Office of the Coordinator-General
OMP	Odour Management Plan
POW	Passive open window
PVC	Polyvinyl Chloride
QHA	*Queensland Heritage Act 1992*
REP	Recycling Enterprise Precinct
RRO	Resource Recovery Orders
SCADA	Supervisory control and data acquisition
SDA	State Development Area
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SOILCO	SOILCO Pty Ltd
SPP	*State Planning Policy 2017*
The Project	Bromelton's compost manufacturing facility, the subject of this application
tpa	Tonnes per annum
VENM	Virgin Excavated Natural Materials
w	width
Water services	Department of Regional Development and Water
WMP	Weed management plan

1.6 Overview of approvals

The construction and operation of the CMF is subject to regulatory approvals. This section provides an overview of the applicable Commonwealth, State and local requirements associated with the CMF and associated approval triggers of the CMF development.

1.6.1 Commonwealth

Environment Protection and Biodiversity Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation and is administered through the Department of Climate Change, Energy, the Environment and Water (DCCEEW). The EPBC Act provides the legal framework to protect and manage Matters of National Environmental Significance (MNES). There are currently nine MNES protected under the EPBC Act:

– World heritage properties
– National heritage properties
– Wetlands of international importance (Ramsar wetlands)
– Nationally listed threatened species and ecological communities
– Listed migratory species
– Commonwealth marine parks
– Great Barrier Reef Marina Park
– Nuclear actions (including uranium mining)
– A water resource, in relation to coal seam gas development and large coal mining development.

No conservation significant flora or fauna species were identified at the CMF during field assessments.

1.6.2 State

State Development Public Works Organisation Act 1971 and Bromelton State Development Area Development Scheme

The Project area is located within the Bromelton SDA and is subject to the Bromelton SDA Development Scheme under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). It meets the preferred development intent of the Area outlined within the Bromelton SDA Development Scheme and is defined as 'medium to large scale industrial activities of regional, state and national significance'. An assessment against the provisions in the Bromelton SDA in outlined in Section 6.

Environmental Protection Act 1994

An environmental authority (EA) under the *Environmental Protection Act 1994* (EP Act) is required for the CMF. In Queensland, an EA is required to perform an environmentally relevant activity (ERA). ERAs are activities with the potential to release contaminants into the environment that will or may cause environmental harm. The operation of the CMF will require the following ERAs:

– ERA 53(a) Organic material processing: Processing more than 200 t of organic material in a year by composting.
– ERA 54 Mechanical waste processing: 2 (c) – operating a facility for receiving and mechanically reprocessing more than 10,000 t a year of general waste.
– ERA 33(1): Crushing, milling, grinding or screening more than 5,000t of material in a year.

Planning Act 2016

The *Planning Act 2016* is the primary legislation governing planning and development in Queensland. It outlines the framework for creating and implementing planning instruments, policies and designations. The Act aims to achieve ecological sustainability and provides a system for plan-making and development assessment.

Part of the subject site is within mapped core koala habitat area and under Schedule 10, Part 10 of the *Planning Regulation 2017,* the clearing of core koala habitat within an SDA is exempted development and therefore does not trigger assessable development.

The subject site is located within the water supply buffer area, which is managed by Seqwater. Therefore, the CMF will be required to be assessed against the Seqwater Development Guidelines Water Quality Management in Drinking Water Catchments Water Resource Catchment Overlay Code. This has been addressed in Pre-lodgement advice has been received from Seqwater (refer to Section 7).

Aboriginal Cultural Heritage Act 2003

The *Aboriginal Cultural Heritage Act 2003* is legislation enacted by the Queensland Parliament to recognise, protect, and conserve Aboriginal cultural heritage in Queensland. It provides protection over areas and objects of traditional, customary and archaeological significance.

The Project area has been assessed as a Category 5 risk in accordance with the Cultural Heritage Duty of Care Guidelines under the *Aboriginal Cultural Heritage Act 2003*. Therefore, a cultural heritage management plan or cultural heritage agreement will be required to be developed with traditional owners under the *Aboriginal Cultural Heritage Act 2003*.

Land Act 1994

The *Land Act 1994* is a key piece of legislation in Queensland that regulates the ownership, use and management of land. It ensures the sustainable use and management of State land by providing guidelines for the allocation of land, including leasing and reservations.

Vegetation Management Act 1999

The project footprint within Lot 4 RP85497 for the CMF will require the clearing of 21 ha of Category X vegetation. The clearing of within the CMF Project area does not trigger approvals as the clearing of Category X area on freehold land is exempt development as outlined under Part 2, Schedule 21 of the *Planning Regulation 2017*.

The project footprint within Mitchell Road will require the clearing of:

– 0.5 ha of Category B Endangered and Of Concern regional ecosystems.
– 0.2 ha of Category X (non-remnant) vegetation.

The clearing within the Mitchell Road Reserve will be limited to 10 m wide and meets the clearing limits in Section 4.3 in Accepted Development Vegetation Clearing Code – Clearing for Infrastructure.

Fisheries Act 1994

Two green low risk waterway barrier works waterways traverse the Project area (referred to as ACT1 and ACT2 and shown in Figure 1.7). The waterways details include:

– ACT1 – traverses outside of the proposed facility location.
– ACT2 – traverses through the centre of the CMF.

The two waterways (ACT1 and ACT2) are not considered to be suitable for fish passage or provide fish habitat for the following reasons:

– The waterways provide no connectivity and fish passage to upstream areas.
– The waterways do not provide suitable fish habitat features and there was no evidence of fauna species within ACT1 and/or ACT2.
– There is no evidence of aquatic species recorded in waterways ACT1 and ACT2.
– ACT1 and ACT2 have reasonably poor water quality.

– No fish passage occurs due to absence of defined bed and banks, minimal flow and depth, no habitat features present and no upstream habitat.
– ACT 1 and ACT 2 are considered to be drainage depressions that carry overland flow water during and immediately after rainfall events; and flows for only a short duration after a rainfall event, regardless of the frequency of flow events; and does not have enough continuing flow to create a riverine environment.

The waterways ACT1 and ACT2 do not meet *Fisheries Act 1994* definition of a waterway and are not considered to provide fish passage. Pre-lodgement advice received from DAF (refer to Section 7) and DAF confirmed that ACT2 appears to be a mapping anomaly. ACT2 feature does not constitute a waterway as it does not have defined bed and banks, fish habitat and it is too steep to provide adequate flow to sustain ecological processes.

DAF noted that ACT1 has a shallower gradient that allows for fish movement, defined bed and banks and shows evidence of fish habitats. DAF considered ACT1 to constitute a waterway as defined under the *Fisheries Act 1994* and any waterway barrier works within this waterway require authorisation. The proposed works in this waterway include a dam could be undertaken under the Accepted Development Requirements, provided a spillway in accordance with the design requirements of work type 3.1 is included. SOILCO would like DAF to reassess waterway ACT1, as based on the aquatic assessment (refer to Appendix G) based on the information presented above. Refer to Figure 1.6 for details on the proposed bulk earthworks and freshwater dam.

Water Act 2000

One minor watercourse intersects the centre of the Project area (ACT2) and is classified as 'Unmapped' under the *Water Act 2000*. Pre-lodgement advice from the Water Resource Management, Water Entitlement Dealings South Department of Regional Development, Manufacturing and Water (DRDMW), confirmed that the unmapped feature is a drainage for the purpose of the *Water Act 2000*. DRDMW also confirmed that no approvals are triggered for the water feature. DRDMW also confirmed that no approvals under Water Plan (Logan Basin) 2007 are required for the proposed freshwater dam and no authorisations are required to take/use water from the proposed dam under this Water Plan.

Environmental Offsets Act 2014

The *Environmental Offsets Act 2014* is legislation in Queensland designed to manage the environmental impacts of development. It aims to counterbalance significant residual impacts of development on environmental values by requiring offsets when unavoidable impacts occur.

A summary of the prescribed environmental matters associated with the subject site and Mitchell Road are discussed below:

– *Waterway providing for fish passage* – Mapped over subject site. DAF confirmed that ACT2 appears to be a mapping anomaly. ACT2 feature does not constitute a waterway as it does not have defined bed and banks, fish habitat and it is too steep to provide adequate flow to sustain ecological processes. DAF considered ACT1 to constitute a waterway as defined under the Fisheries Act 1994 and any waterway barrier works within this waterway require authorisation. The proposed works in this waterway include a dam could be undertaken under the Accepted Development Requirements, provided a spillway in accordance with the design requirements of work type 3.1 is included.
– *Endangered or of concern regional ecosystems* – Category B sections are mapped over Mitchell Road reserve and will be impacted by vegetation clearing activities. However, vegetation clearing is being undertaken in accordance with the Accepted Development Vegetation Clearing Code – Clearing for Infrastructure
– *Regional ecosystems within the defined distance of a watercourse* – This matter is mapped over the subject site and alignment with the DAF waterways. The two water features are classified as stream order 1 and will be impacted by the CMF.
– *Connectivity* - The extent of clearing within the Project area is unlikely to create a substantial barrier or restrict fauna movement. The Project is located in a landscape that has already been highly fragmented from historical clearing and agriculture. The existing state of the site in which the composting facility is proposed on is historical agricultural land in which a majority of the habitat has already been degraded. Habitat fragmentation can isolate populations by causing barriers to local fauna movement. The quality of persisting habitats can be substantially degraded by edge effects associated with increased exposure to light, noise,

run-off, sedimentation, erosion and weed and pest infestation. The Project footprint contains the unsealed Mitchell Road to the north, and is bordered by Beaudesert Boonah Road to the north-east, and a railway line to the east. Given the observed evidence of infrastructure maintenance (vegetation trimming, mowing, etc.) and impacts associated with infrastructure operation (compacted tracks), habitat within the Project area currently experiences fragmentation from the historical vegetation clearing in the surrounding landscape. Additionally, vegetation within the Project area occurs largely as non-remnant, with only patches of regrowth and remnant vegetation on the Project area boundaries including in the south-west and north along Mitchell Road. Given the above, it is considered that no patches of remnant vegetation will become directly isolated as a result of the proposed works.

– *Essential habitat* – is mapped over the Category B sections of Mitchell Road reserve and will be impacted by vegetation clearing activities. The short-beaked echidna (Tachyglossus aculeatus) has the potential to occur in subject site and a significant impact assessment determined that the Project is unlikely to have a significant residual impact on this species. White-throated needletail, Grey-headed flying fox, Yellow bellied glider and Greater glider have the potential to occur in subject site and a significant impact assessment determined that the Project is unlikely to have a significant residual impact on this species. The clearing within the essential habitat area is not expected to exceed the clearing limits as outlined in the Significant Residual Impact Guideline.
– Protected wildlife habitat – Core koala habitat mapped within Mitchell Road and will be cleared as part of the road upgrade. The clearing of core koala habitat within an SDA is exempted development and therefore does not trigger assessable development. Core koala habitat is mapped on Lot 4, but will not be impacted.

In accordance with Bromelton SDA assessment criteria 2.5.11 (5): Offsets maybe required if residual significant impacts to MSES or MNES caused by the development cannot be avoided. Further information about the significant assessment completed for the Project is included section 8.1.2.5 of Appendix G: Terrestrial Ecological Assessment Report.

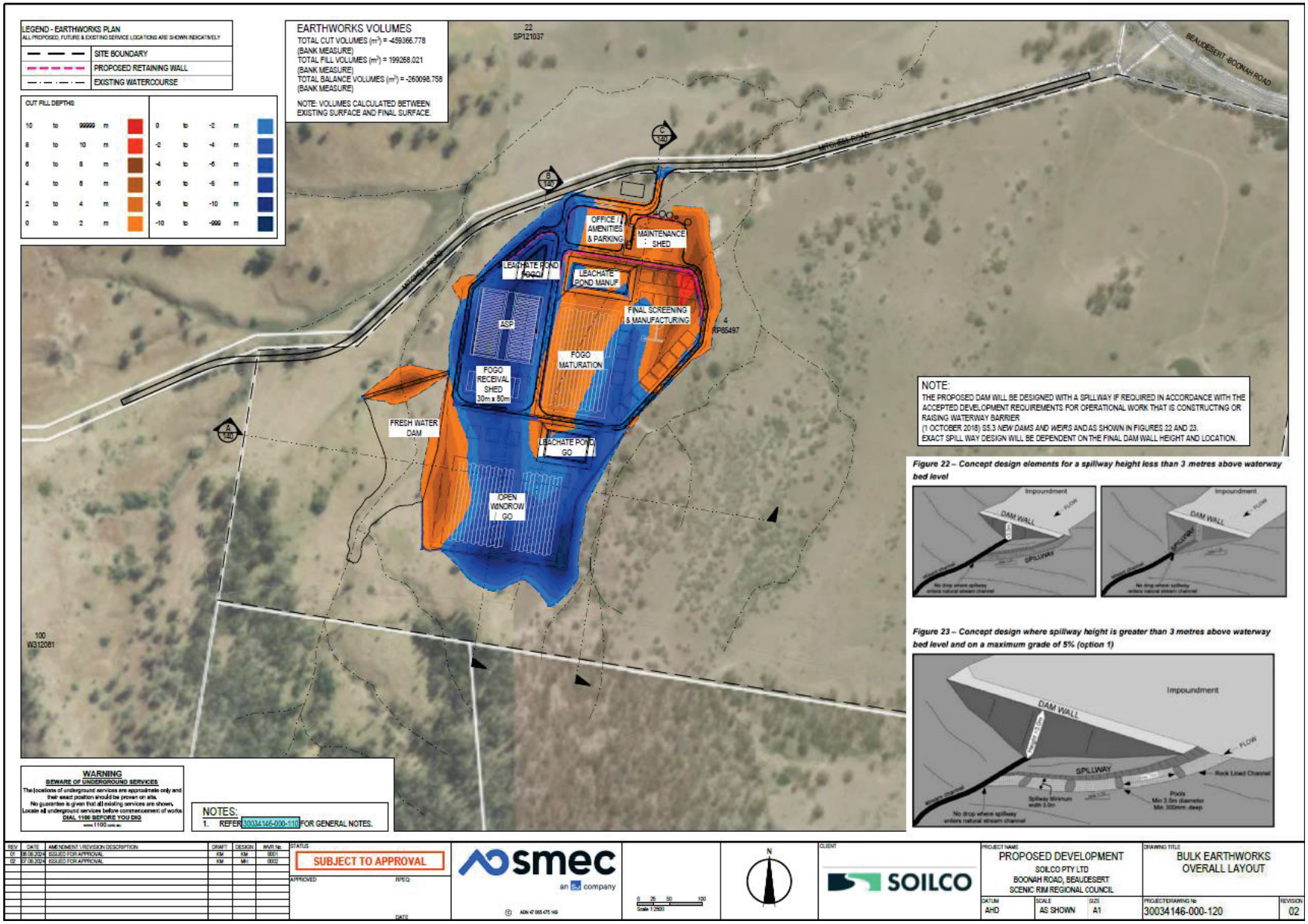
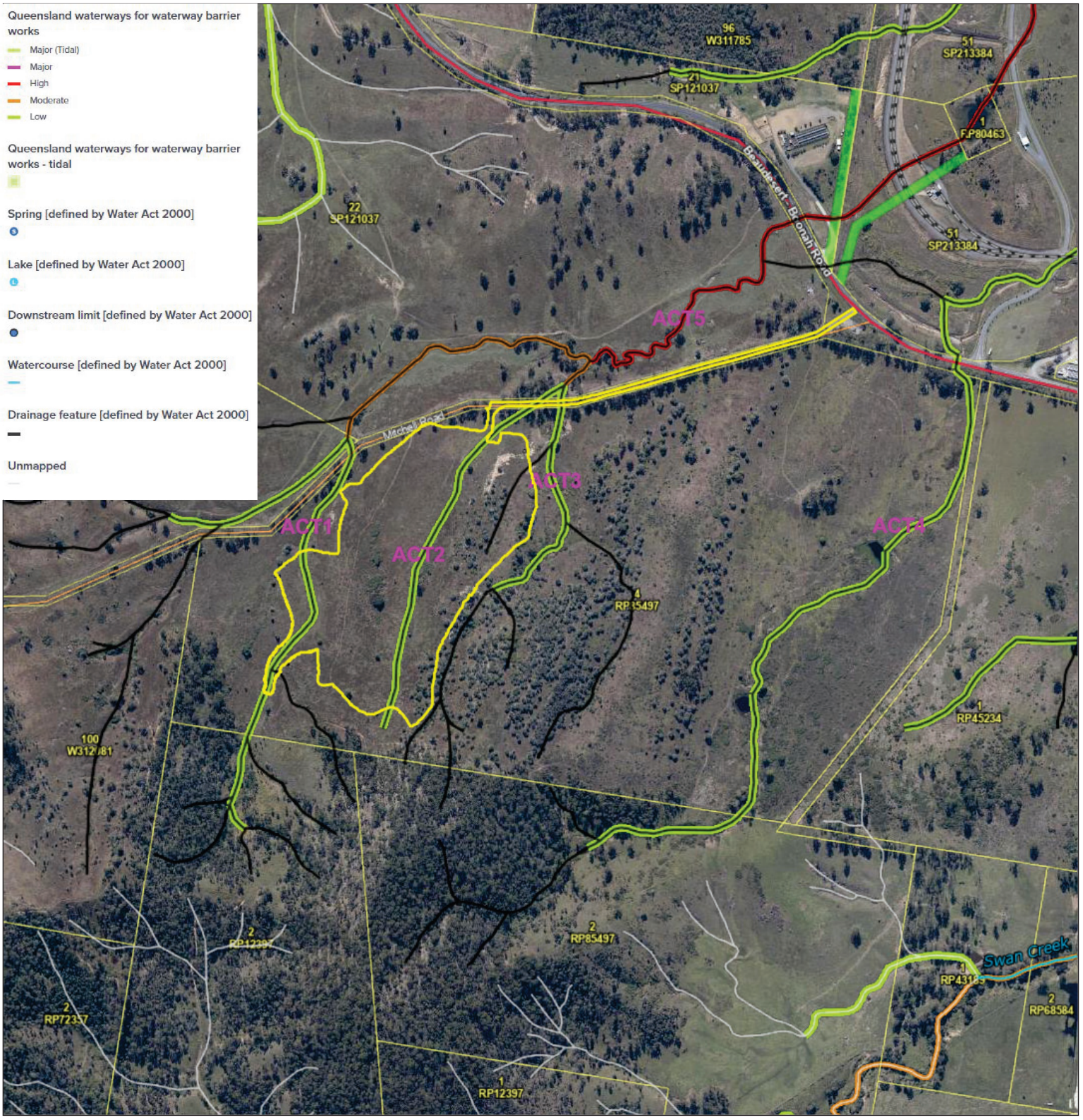


Figure 1.6 Earthwork overall layout



A product of Queensland Globe

Project area

N

0 250 metres

Scale: 1:9027

Printed at: A3

Print date: 12/10/2024

Not suitable for accurate measurement.

Projection: Web Mercator EPSG 102100 (3857)

For more information, visit https://qldglobe.information.qld.gov.au/help-info/Contact-us.html

Queensland Government
Department of Resources

Figure 1.7 Water features within Project Area

1.7 Supporting technical studies

Technical studies that have been prepared in support of this application are included in Table 1.4.

Table 1.4 Supporting technical studies

Technical study	Description	Location in report
Ecological assessment	A terrestrial ecology assessment has been developed for the proposed compost manufacturing facility. A desktop and field assessment have been undertaken to identify any terrestrial ecological values of the environment within the study area. Several ecological values were identified during the desktop assessment for the Project area including regulated vegetation, core koala habitat, and predicted habitat for conservation significant species. Six conservation significant fauna species were considered likely or with potential to occur, due to the presence of suitable habitat and historical records within the Study area. There are several mitigation measures to reduce the potential impacts on ecological values in the study area such as restricted vegetation clearing, fencing, fauna spotter/catcher and rehabilitation after construction. The implementation of a Construction management plan (CEMP), Weed Management Plan (WMP) and Erosion and Sediment Control Plan (ESCP) during the design and construction phase also help reduce potential impacts on terrestrial ecological values. This technical report addresses points 1, 2, 3, 5, and 6 from section 2.5.11 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix G
Waste management plan	A waste management plan has been written to identify the waste streams associated with the construction and operation of the Compost Manufacturing Facilities and detail the measures to manage waste and promote resources recovery. Three streams were identified for the construction phase, and five for the operations. Several mitigations measures were listed to manage waste following the hierarchy defined in the Waste Reduction and Recycling Act 2011, including avoiding waste through thorough planning and procurement of materials, reduce packaging waste by bulk ordering, reuse the green waste generated during the construction phase during operations, segregate recyclable waste, recovered materials and hazardous waste and treat them in appropriate licensed facilities. This plan addresses the requirements 10 and 11 from Table 8 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix H
Traffic impact assessment	Two traffic impact assessments have been prepared for the construction stage (Appendix I) and for the operational stage (Appendix J) of the compost manufacturing facility, excluding the traffic activities of the Beaudesert Boonah Road/ Mitchell Road construction. According to the assessment, the construction traffic can be sufficiently catered by the proposed upgrade intersection at Beaudesert Boonah Road and Mitchell Road, and the safety of motorists, the roads capacity and the expected delays are not expected to be worsen by the project. This assessment addresses points 1, 3, 4, and 6 from Section 2.5.2 of the Bromelton State Development Area – Development Scheme (Dec. 2017). According to the second assessment, the proposed development is expected to generate 45 new trips (combined in and out) in the AM and PM peak periods during its operations. A risk assessment indicates that there is an increase in risk score associated with the development traffic, however this is largely due to the fact that there are no turn movements currently occurring at the intersection. The proposed form of the intersection will provide sufficient capacity and therefore, no mitigation measures are deemed necessary.	Refer to Appendix I and Appendix J
Environmental management plan (EMP)	An EMP has been developed to establish an environmental management framework that will guide the construction and operational phases of the Project to minimise potential impacts to the surrounding environment. It outlines the environmental measures and procedures to be considered and refined in the subsequent project phases (i.e. detailed design, construction and operation), to avoid and/or minimise potential environmental impacts associated with the Project. This document addresses the points listed in Section 2.5.11 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix K
Air quality impact assessment	An Air Quality Assessment (AQA) has been prepared to determine any potential impacts on the nearby sensitive receptors during the construction and operational phases of the project. Dust impacts from both the construction and operational phases have been assessed to be low risk. Odour emissions during the operational	Refer to Appendix L

Technical study	Description	Location in report
	stage will not cause significant environmental impacts according to the model predictions. This assessment explains the projects' compliance with Section 2.5.4 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	
Visual impact assessment	A visual impact assessment has been developed to assess the potential impact of the project on the surrounding landscape and views. Visual impacts of the Project are anticipated to be moderate-low to negligible as appropriate built form, mitigation and retention of existing vegetation, and visual screening will assist in limiting the visual impacts of the Project. This assessment responds to the requirements in Sections 2.5.3, 2.5.12, and 2.5.14 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix M
Surface Water Impact Assessment	Surface Water Impact Assessment has been developed in collaboration with the design process for the project to develop in-built mitigation measures which seek to manage water-related aspects of the project. The report suggests several in-built management measures, as well as additional measures to be implemented during the operational stage. Those measures include appropriate separation of water types, provision of 30 ML of leachate storage, provision of a 30 ML harvesting storage to minimise reliance on tinkering, and provision of an erosion and sediment control plan. This report addresses Sections 2.5.5, 2.5.8, and point 2 of Section 2.5.9 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix N
Noise impact assessment	A noise impact assessment has been conducted of the construction and operational phases of the project to identify and determine any potential impacts on the nearby sensitive receptors. The report concludes the project complies with the relevant legislation and recommends implementing a few mitigation actions and best practices to minimise negative impacts. This report addresses the requirements of Section 2.5.4 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix O
Groundwater assessment	A desktop groundwater assessment was completed to determine potential impacts to groundwater resources from the construction and operation of the Project. Several potential impacts were identified that could occur during construction including groundwater seepage in excavations, collection and disposal of seepage, contamination of soil and groundwater from unintentional spills of hazardous substances, ARD from potentially sulfidic-containing rock used as fill, importation of contaminated fill, and changes in the landform resulting in altered groundwater levels. Several mitigation actions have been included in the report, including a Groundwater Management Plan, and a Hazardous Materials and Waste Management Plan.	Refer to Appendix P
Bushfire Hazard Assessment and Management Plan	A Bushfire Hazard Assessment and Management Plan has been developed for the proposed compost manufacturing facility. The Bushfire Hazard Assessment has been conducted in accordance with Part 5 of the Bushfire Resilient Communities guidance material supporting the implementation of the State Planning Policy, prepared by Queensland Fire and Emergency Services. The bushfire risk is expected to be low to moderate. There are several mitigation measures to manage bushfire risk such as asset protection zones, fencing, water supply, fire-fighting infrastructure, revegetation, and fuel load management. The report addresses the Section 2.5.6 of the Bromelton State Development Area – Development Scheme (Dec. 2017).	Refer to Appendix Q
Cultural heritage assessment	A cultural heritage assessment was developed to assess the potential risk the project poses to cultural heritage values prior to works commencing for the Compost Manufacturing Facility. This cultural heritage review includes a desktop assessment identifying any known cultural heritage places recorded on the relevant registers and databases. It also documents the field survey of the works area and the values or places identified, including those not previously documented. The desktop assessment revealed that there were two (2) known cultural heritage values within 1km of the project area. The field investigations found numerous stone artefacts within the works area on areas where the ground surface was able to be seen. As there are ridgelines, watercourses and some mature vegetation within the project area, the likelihood of further cultural heritage values is significantly high. There are numerous site mitigation measures to manage cultural heritage risk such as education and training of site personnel, site inductions delivered by a responsible cultural heritage officer and through the implementation of a CEMP during construction works. This assessment addresses the first point in Section 2.5.11 of the Bromelton State Development Area – Development Scheme (Dec. 2017	Refer to Appendix R
Slope stability report	A landslide stability assessment has been developed for the proposed development. The assessment was based on a review of available published geological information	Refer to Appendix S

Technical study	Description	Location in report
	and a walk-over survey by a geotechnical engineer. The previous geotechnical investigation found no signs of groundwater or seepage were recorded in previous investigated boreholes. The site walkover observations indicated site drainage to be generally poor to fair. Erosion was noted around the creek located north of the site. The maximum slope fall is approximately 25 - 30%. Aside from the previously noted creek bed, there were no signs of water ponding and instability noted at the site. The creek banks and areas of cut to fill should be checked by a geotechnical engineer at time of construction to verify stability to mitigate landslide risk. The proposed site also has a low landslide susceptibility rating.	
Energy Concept Report	The Energy Concept Report outlines the infrastructure required for the CMF. An application has been placed with Energex for the supply of the site (Reference CX24BEA1117829Q) which is placed on hold until the development approval (and additional details) can be provided. The following is proposed for the CMF: – New sitewide point of supply – New internal roadway lighting – Electrical supply to manufacturing equipment – External distribution boards with consideration for future connected electrical plant equipment.	Refer to Appendix T
Site and Soil Evaluation Report	A Site and Soil Evaluation Report has been completed and it outlines the on-site wastewater treatment and the effluent disposal from the CMF. It is recommended that the CMF installs an advanced secondary all-waste sewage system such as the Envirocycle 10EP advanced Secondary Wastewater treatment system. The peak daily design volume for the entire site is 4.4 Equivalent persons – 600l/day – loads from staff. A Land Use Risk Rating Form Assessment has also been for the on-site wastewater treatment.	Refer to Appendix U
Stakeholders Engagement Report	SOILCO has developed a stakeholders engagement report, and this report summarises the engagement activities that have been, or will be, undertaken by SOILCO within various stakeholders.	Refer to Appendix V

2. Summary of application details

Table 2.1 Summary of application details

Applicant	SOILCO Pty Ltd C/- GHD Pty Ltd
Street address and real property description	260 Mitchell Road, Bromelton QLD 4285 (Lot 4 on RP85497)
Registered landowner	SOILCO Infrastructure Queensland Pty Ltd
Site area	161 ha
Construction footprint	21ha area
Operational footprint	18.5 ha area
Local government area	Scenic Rim Regional Council
Categorising instrument	*Bromelton State Development Area Development Scheme*
Zoning	Special industry precinct
Current use	Greenfield (grazing) land
Proposal	Special industry (CMF) which will involve the receipt, processing, composting, and storage of up to 250,000 tpa of the following materials: Garden, Food and Wood wastes and manure. Receipt, processing, storage and blending of up to 150,000 tpa of sand and soil products for manufacturing (Virgin Excavated Natural Materials or VENM). Two composting technologies will be utilised to handle different feedstocks: – 100,000 tpa of garden organics (GO) composted by Passive Open Windrow (OW) method. – 150,000 tpa of Food Organics and Garden Organics (FOGO) is to be processed on a Forced Aeration Pad system (ASP). Wood wastes and manure will make up a small portion of the composting feedstocks and will be blended with the GO and FOGO based on onsite capacity. VENM will be received and stored as required based on demand of finished products. Due to the seasonal nature of feedstock generation, up to 15% of the total annual waste may be received in any one month. This would typically occur around spring and autumn To support the operation of the Bromelton CMF, the Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road will be upgraded to provide for safe and efficient access to and from the site. SOILCO is addressing a separate approval with TMR for the intersection works. In addition, Mitchell Road will be upgraded to facilitate the access to the subject site. Scenic Rim Regional Council have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from SRRC for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network.
Aspects of development	A development permit for MCU special industry – CMF
Category of assessment	Assessable development
Assessment manager	Coordinator-General
Referral agency	– Department of Environment, Science and Innovation (DESI) – Department of Agriculture and Fisheries (DAF) – Department of Resources (DoR) – Department of Transport and Main Roads (TMR) – Scenic Rim Regional Council – Seqwater.
Applicable State codes	- Seqwater Development Guidelines Compliance: Water Quality Management in Drinking Water Catchments (Section 6 and Appendix F) - Bromelton SDA Development Scheme State code (Section 6.3 and Appendix D) - State Development Assessment codes (Appendix E)

3. Site characteristics

3.1 Overview

The subject site is located within the Scenic Rim Regional Council local government area at 260 Mitchell Road, Bromelton, formally described as Lot 4 on RP85497 (referred to as the 'subject site') (refer to Table 3.1 and Figure 1.1). The site is owned by SOILCO Infrastructure QLD Pty Ltd with no recorded easements. The land has approximately 340 metres of street frontage to the Beaudesert-Boonah Road (State-controlled road). Further frontage exists to a currently unformed, gazetted, road corridor along the property's northwest boundary known as Mitchell Road (local road), which will be constructed along with an intersection to Beaudesert-Boonah Road to provide access to the CMF. Landowners consent is provided in Appendix C.

The existing land has been previously used for grazing of native vegetation and the topography is a series of undulating hills and valleys. The proposed new CMF area of approximately 18.5 ha (the 'Project footprint') would be constructed and graded to provide the appropriate area and water control measures to successfully operate and manage the facility. The selected area has been chosen as it is located towards the rear of the property away from the main road and will provide an elevated area large enough to incorporate all the required infrastructure for the CMF operations.

Table 3.1 Subject site tenure

Real property description	Subject site address	Tenure	Registered landowner	Area
4RP85497	260 Mitchell Road, Bromelton, QLD 4285	Freehold	SOILCO INFRASTRUCTURE QUEENSLAND PTY LTD	1,192,790 m^2

3.2 Current and surrounding land use

The subject site is vacant, greenfield land currently used for rural grazing/agricultural purposes. Beaudesert is the nearest townsite to the Project area. As the Project sits within the Bromelton State Development Area (SDA) which promotes economic development by providing land for medium to large-scale industrial activities, there are some industrial activities near the subject site. Northern to the Beaudesert-Boonah Road there is a logistic company, a concrete manufacturer and a waste landfill and recycling facility. The surrounding land is used for a range of rural activities such as dairy farming, agriculture and equine activities. Refer to Figure 3.1 for pictures of the surrounding areas.

Figure 3.1 *Surrounding land use*

3.3 Existing infrastructure

3.3.1 Service infrastructure

An assessment of existing infrastructure has been undertaken for the project area. A Before You Dig Australia (BYDA) request was lodged to identify whether service infrastructure was likely to be present in the area. The services outlined in Table 3.2 are located in the immediate vicinity of the Project area.

Table 3.2 Existing infrastructure

Aspect	Details
Water	No – Urban Utilities mapping shows a pipeline of potable water terminates at Recycling Street. This has potential to be extended. There is no municipal water supply available.
Sewer	No – Urban Utilities infrastructure mapping does not identify any sewer infrastructure in vicinity of the Project area.
Stormwater	No – There is no stormwater infrastructure within the subject site.
Electricity / telecommunications	Underground assets below 33kV can be found in the Beaudesert-Boonah Road to the East of the intersection with the Mitchell Road, according to the results shown in BYDA search.
Gas	Unknown – no asset results shown in BYDA search results.

3.3.2 Roads, access and parking

The subject site contains road frontages onto Beaudesert-Boonah Road and Mitchell Road:

- Beaudesert-Boonah Road is a State-controlled road connecting Coulson (west) and Beaudesert (east) via a single-lane, two-way 80km/hr road. The Department of Transport and Main Roads (DTMR) heavy vehicle route map identifies Beaudesert-Boonah Road as:
  - One-tonne mass transfer network (route code 1TMT)
  - HML – other declared road, 25m B-doubles and lower
  - Critical road Type A travel requirements (conditionally approved).
- Two Traffic impact assessments have been undertaken to understand the background traffic volumes as the likely impact of the proposed development. Refer to Appendix I for GHD's report focused on the traffic impact during the construction phase, and to Appendix J for a third-party report focused on the traffic impact during the operational phase. The 2022 DTMR average annual daily traffic (AADT) Census data indicates Beaudesert-Boonah Road (both directions) records 3,500 vehicles per day. The TMR AADT Census data station '10012' found a yearly growth rate of 2.27% per annum (p.a.) for the gazettal direction (towards Coulson, to the West), and a 2.25% p.a. growth rate for the against direction (towards Beaudesert, to the East).
- Mitchell Road is a currently unformed, gazetted, road corridor along the property's northwest boundary. Mitchell Road connects to Beaudesert-Boonah Road.
- During the facility's operation, the Beaudesert-Boonah Road / Mitchell Road intersection will theoretically operate below capacity during the opening year (2026) and 10-year design horizon in all peak periods for a priority-controlled intersection. The maximum delay recorded at the intersection in the 2036 design scenario is approximately 27 seconds, well below DTMR's safety threshold. Additionally, the road link capacity assessment indicates that Beaudesert-Boonah Road will operate well below the operational capacity of a two-way, two-lane corridor with the inclusion of development traffic.
- The risk assessment indicates that there is an increase in risk score associated with the development traffic, however this is largely due to the fact that there are no turn movements currently occurring at the intersection. The proposed form of the intersection will provide sufficient capacity and therefore, no mitigation measures are deemed necessary. Refer to Appendix J for further details regarding the traffic impact during the CMF's operation phase.

The subject site maintains road frontage onto Mitchell Road only. Vehicular access is currently provided via informal gated entrances on Mitchell Road. As the site is greenfield, vacant land, there are no formal car parks located onsite.

3.4 Existing environmental values associated with the subject site

This section outlines the environmental values associated with the subject and is based on the findings on a number of technical studies completed for Project as outlined below:

- Ecological assessment refer to Appendix G
- Traffic impact assessment refer to Appendix I and Appendix J
- Air quality impact assessment refer to Appendix L
- Visual impact assessment refer to Appendix M
- Surface Water Impact Assessment refer to Appendix N
- Noise impact assessment refer to Appendix O
- Groundwater assessment refer to Appendix P
- Bushfire Hazard Assessment and Management Plan refer to Appendix Q
- Cultural heritage assessment refer to Appendix R
- Slope stability report refer to Appendix S.

3.4.1 Topography, soils and landform

The subject site is undulating and slopes steeply towards the north, with site elevations ranging from 155m AHD at the southern boundary of the Project area to 100m AHD at the northern boundary. The grade of west-east undulations at the Project area is up to 24%, refer to Figure 3.2.

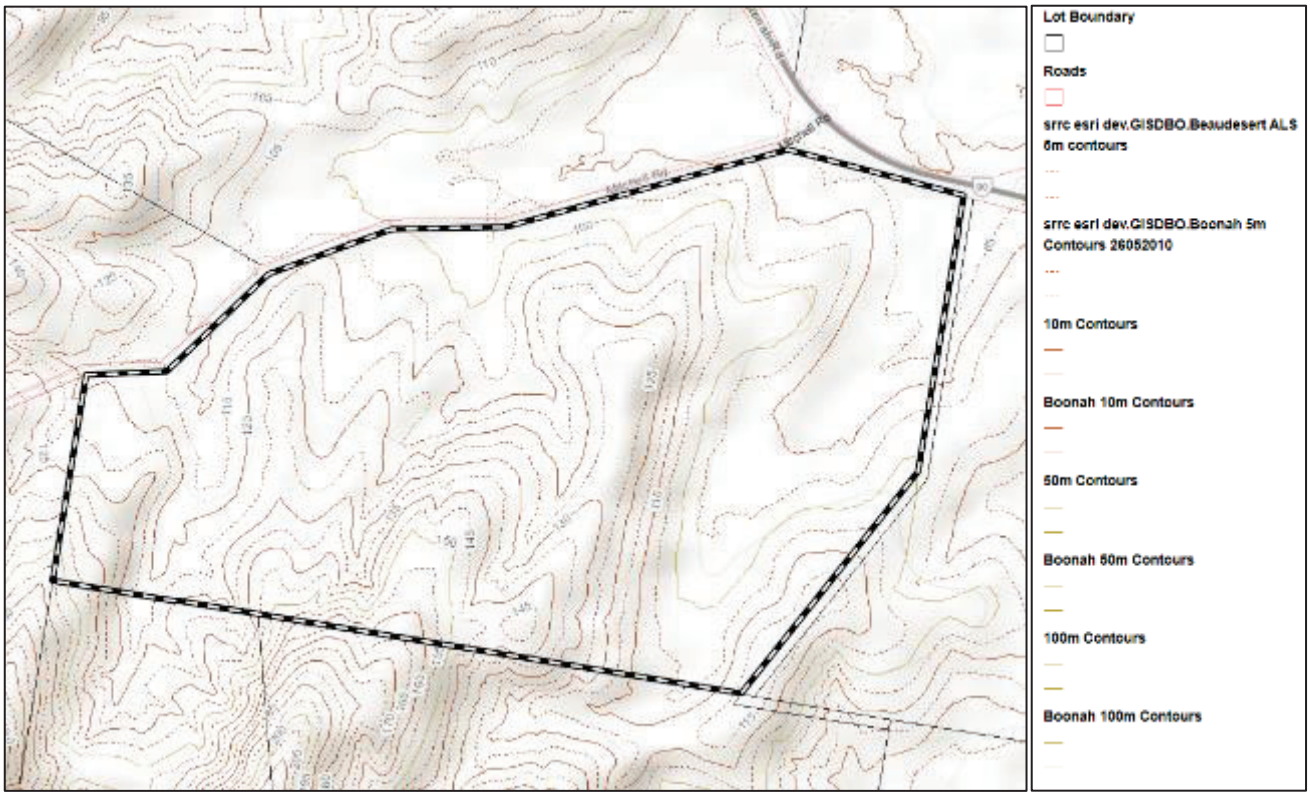


Figure 3.2 Contour mapping (Source: Scenic Rim Planning Scheme interactive mapping)

The subject site falls entirely in the Logan River sub-basin of the Logan-Albert Rivers Catchment. Several watercourses in the form of first-order tributaries of Allan Creek flow northwards across the lot from the southern boundary. Two dams occur along a watercourse towards the eastern portion of the lot. Water may persist in the landscape for a significant period after rainfall owing to the gently undulating to flat topography.

Soils across the Project area largely reflect the underlying geologies. Major soil types occurring in the Project area based on the Soil and Land Resources of the Logan and Albert Rivers Catchment (2004) mapping prepared at 1:50,000 scale are listed in Table 3.3.

Acid sulphate soils are not considered to be present within the Project area due to the Project area being located above 20m AHD.

Table 3.3 Major soils occurring in the Project area

Mapping name	Soil map unit	Description and general characteristics	Area (Ha)
Cedar Vale	Cv	Very shallow to shallow, red, strongly acidic to neutral texture contrast, gradational or uniformly fine soils over sandstone or siltstone from 0.3m. Chromosols, Kurosols.	34.670
Drynan	Dn	Moderately deep (also shallow), red, texture contrast soil on siltstone and sandstone, generally underlain by grey clays. Chromosols, Kurosols.	24.832
Koukandowie-Lowood Complex	Kk-Lw	Moderately deep to very deep, neutral to alkaline brown, black or occasionally yellow sodic texture contrast soils on siltstone or sandstone. Subsoils are neutral to strongly alkaline, mottled and may be calcic. Often saline. Sodosols, Kurosols.	4.374
Mundoolun	Mu	Shallow, slightly acidic brown or grey texture contrast to gradational soils on sandstone. Soils are frequently bleached and/or mottled and may also be slightly saline. Chromosols, Kurosols.	3.314
Richards	Ri	Moderately to very deep, mottled, grey, slightly acidic to alkaline gradational or uniformly fine soils over siltstone or sandstone from 0.65m. Dermosols, Ferrosols.	42.157

3.4.2 Groundwater

SOILCO commissioned the installation of a water supply bore near the northern boundary of the subject site on 10 May 2024 (handheld GPS location: -27.975556, 152.913333). The water supply bore that was drilled encountered groundwater at 18m below ground level and is located at a low point within the site near one of the drainage lines. The airlift yield of the bore was relatively low with an estimated supply of 0.487L/s over two hours. A pumping test was not completed on the bore so the sustainable yield is unknown, however, given the hydrogeological properties of the Heifer Creek Sandstone, it is suspected that the sustainable yield would be much lower, and therefore the potential drawdown in the aquifer would be limited.

Laboratory water analysis was completed on a sample collected from the water supply bore. The results indicated water quality was relatively good, generally meeting the Australian Drinking Water Guidelines (2011) for key parameters, except for salinity, hardness, sodium and chloride. All tested Australian and New Zealand guidelines (ANZG) 2018 default guideline values (95% aquatic species protection for moderately to slightly disturbed systems) are met except for zinc, which slightly exceeded the default guideline values.

There are other 28 registered groundwater bores within a 1 km radius of the subject site. Of the registered bores, five are registered as existing water supply bores.

The registered bores are within seven hydrogeological units, including alluvium, undefined quaternary, Walloon Coal Measures, Koukandowie Formation, and Heifer Creek Sandstone Member. The relevant details held in the Groundwater Database are provided in Table 3.4, and more detail provided in the Groundwater assessment (refer to Appendix P).

Table 3.4 Summary of aquifer properties for the geological units near the site (Groundwater database data)

Hydrogeological unit	No. bores	Aquifer depth range (m BGL)	Screened lithology description	SWL (m BGL)	Yield (L/s)	Water quality
Allan Creek Alluvium	4	6.0 – 18.5	Sand, gravel, sandy clay, clayey gully wash, clay	3.0 – 9.0	0.4 – 2.25	Potable to 2,100 µS/cm
Swan Creek Alluvium	2	10.5 – 14.0	Silty sand, clay	9.0 – 12.0	0.06	No data
Logan River alluvium	4	9.0 – 10.0	Fine sand, fine to medium sand, fine to coarse sand	No data	No data	No data
Undefined Quaternary	3	6.0 – 13.5	Clay, clayey sand, gravelly sand, sandy clay with sand and gravel	4.0 – 7.0	0.1 – 0.5	Potable to 5,000 µS/cm
Walloon Coal Measures	6	9.0 – 55.0	Ironstone, sandstone, siltstone, coal, mudstone	8.0 – 10.0	0.08 – 1.13	2300 – 4800 µS/cm
Heifer Creek Sandstone Member	2	15.0 – 17.0	Siltstone, coarse-grained sandstone, silty sand, sandstone	8.0 – 14.0	0.06 – 0.3	3800 – 4220 µS/cm
Koukandowie Formation	2	6.0 – 11.0	Coarse quartz and sandstone	1.8 – 8.5	0.1 – 0.19	Potable to 650 µS/cm

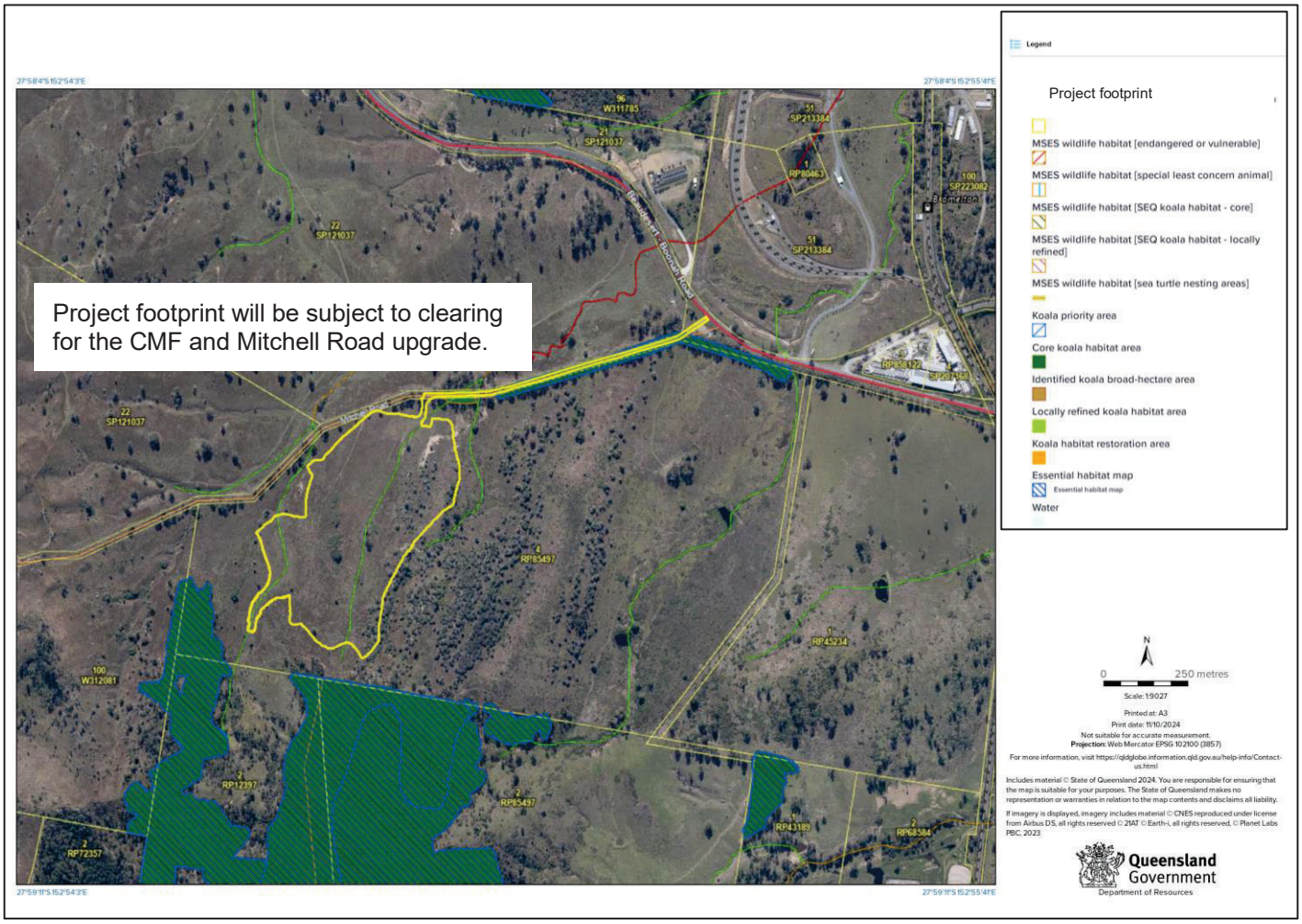
3.4.3 Terrestrial ecological values

The Project is proposed in an area of previously cleared land utilised for agricultural activities, with occasional trees and very low scattered regrowth. The terrestrial national, state and local ecological values are outlined in Table 3.5 and more detailed information is in Appendix G.

Table 3.5 Terrestrial national, state and local ecological values

Matters	Details
Matters of national environmental significance (MNES)	Five MNES have potential or are likely to occur in the ecological Study area, being: – White-throated needletail (*Hirundapus caudacutus*) – Koala (*Phascolarctos cinereus*) – Grey-headed flying fox (*Pteropus poliocephalus*) – Yellow bellied glider (*Petaurus australis australis*) – Greater glider (*Petauroides volans*). Habitat for the five MNES species primarily occurs in the surrounding areas and not directly impacted by the Project area. The exception is the presence of dispersal habitat for the koala and very limited foraging tree species for the grey-headed flying fox. In Queensland, TECs are linked to certain REs which are identified in the listing advice of each TEC. The ecological field survey assessed vegetation communities within the Project area to determine the presence of any TECs. There are no vegetation communities within the Project area that could conform to any TECs. There were no conservation significant flora species identified during field surveys. Likelihood of occurrence assessment determined all flora species as either unlikely or highly unlikely to occur. No flora species required a significant impact assessment. No migratory fauna was confirmed present within the Project area or assessed as likely to occur or with potential to occur. While the white-throated needletail was considered likely to occur, the species is also listed as vulnerable under the EPBC Act and is therefore considered in the above section and has been assessed under the vulnerable status EPBC Act significant impact guidelines criteria.
Matters of state environmental significance (MSES)	**Endangered or of concern regional ecosystems** Category X is mapped the Project area where the CMFis proposed. Category B sections are mapped over Mitchell Road reserve and will be impacted by vegetation clearing activities. However, vegetation clearing is being undertaken in accordance with the Accepted Development Vegetation Clearing Code – Clearing for Infrastructure. Refer to Figure 3.4 and Figure 3.5.

Matters	Details
	Regional ecosystems within the defined distance of a watercourse – This matter is mapped over the subject site and alignment with the DAF waterways. The two water features are classified as stream order 1 and will be impacted by the CMF. **Essential habitat** Essential habitat is mapped adjacent to the Project area in the south, which includes an area of habitat slightly within the south-west extent of the Project area. It is anticipated that this habitat will not be directly impacted by the Project. Essential habitat for the koala (Phascolarctos cinereus) is also mapped along Mitchell Road to the north. This area is also mapped as core koala habitat. The Project area has been subject to large-scale vegetation clearing and grazing. The Project area supports cleared land that comprises an exotic grassland with very occasional shrubs and isolated trees. Open woodlands occur only in the south-west of the Project area and Lot, as well as along Mitchell Road reserve. These vegetated areas include mapped essential habitat for the koala. Microhabitats were present adjacent to the Project area. These were primarily hollows (generally small) present in eucalypt trees (predominantly E. tereticornis) adjacent to the Project area. These could provide breeding habitat for gliders as well as avifauna. However, all but one area with these hollows was deemed unsuitable habitat for gliders due to lack of connectivity. Terrestrial habitats identified in the field include: – Within Project footprint: – Cleared land with scattered trees – Remnant eucalypt woodlands (Mitchell Road) – Adjacent to Project footprint: – Regrowth connected to remnant eucalypt woodlands – Acacia woodland on rocky terrain. There are no areas mapped as essential habitat for threatened flora species within the Project area. The short-beaked echidna (Tachyglossus aculeatus) has the potential to occur in subject site and a significant impact assessment determined that the Project is unlikely to have a significant residual impact on this species. White-throated needletail, Grey-headed flying fox, Yellow bellied glider and Greater glider have the potential to occur in subject site and a significant impact assessment determined that the Project is unlikely to have a significant residual impact on this species. The clearing within the essential habitat area is not expected to exceed the clearing limits as outlined in the Significant Residual Impact Guideline (for MSES and prescribed activities assessable under SPA). Refer to Figure 3.3. **Protected wildlife habitat** Core koala habitat mapped within Mitchell Road and will be cleared as part of the road upgrade. The clearing of core koala habitat within an SDA is exempted development and therefore does not trigger assessable development. Core koala habitat is mapped on Lot 4, but will not be impacted. Refer to Figure 3.3. **Protected plants trigger area** There were no mapped protected plants trigger areas within the Project area.
Matters of local environmental significance (MLES)	Nil mapped under the Environmental significance overlay for local biodiversity.



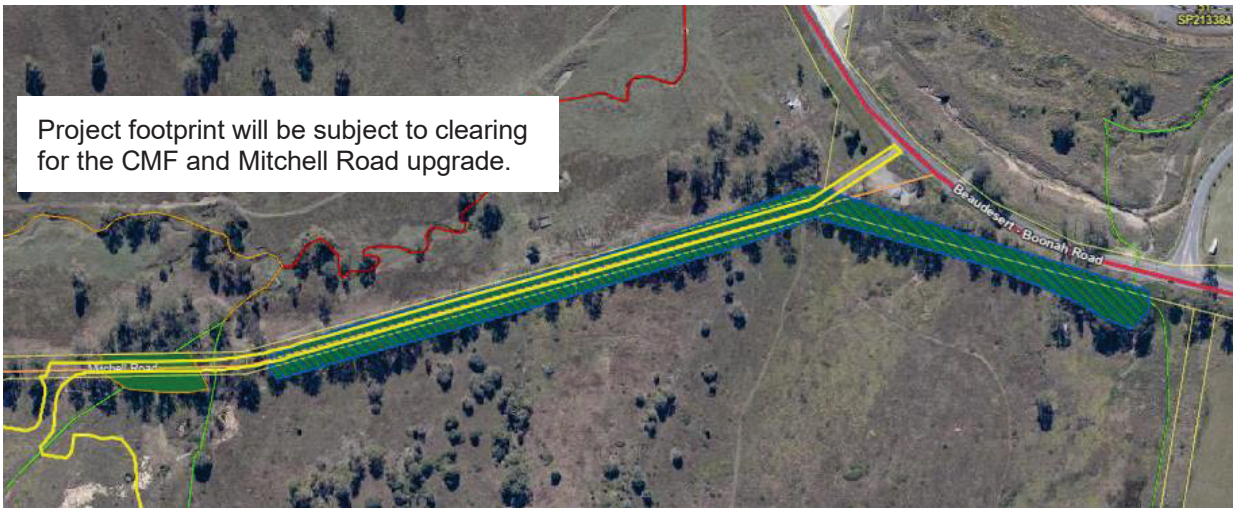


Figure 3.3 Essential habitat areas, core koala habitat areas, MSES wildlife habitat within the Project area

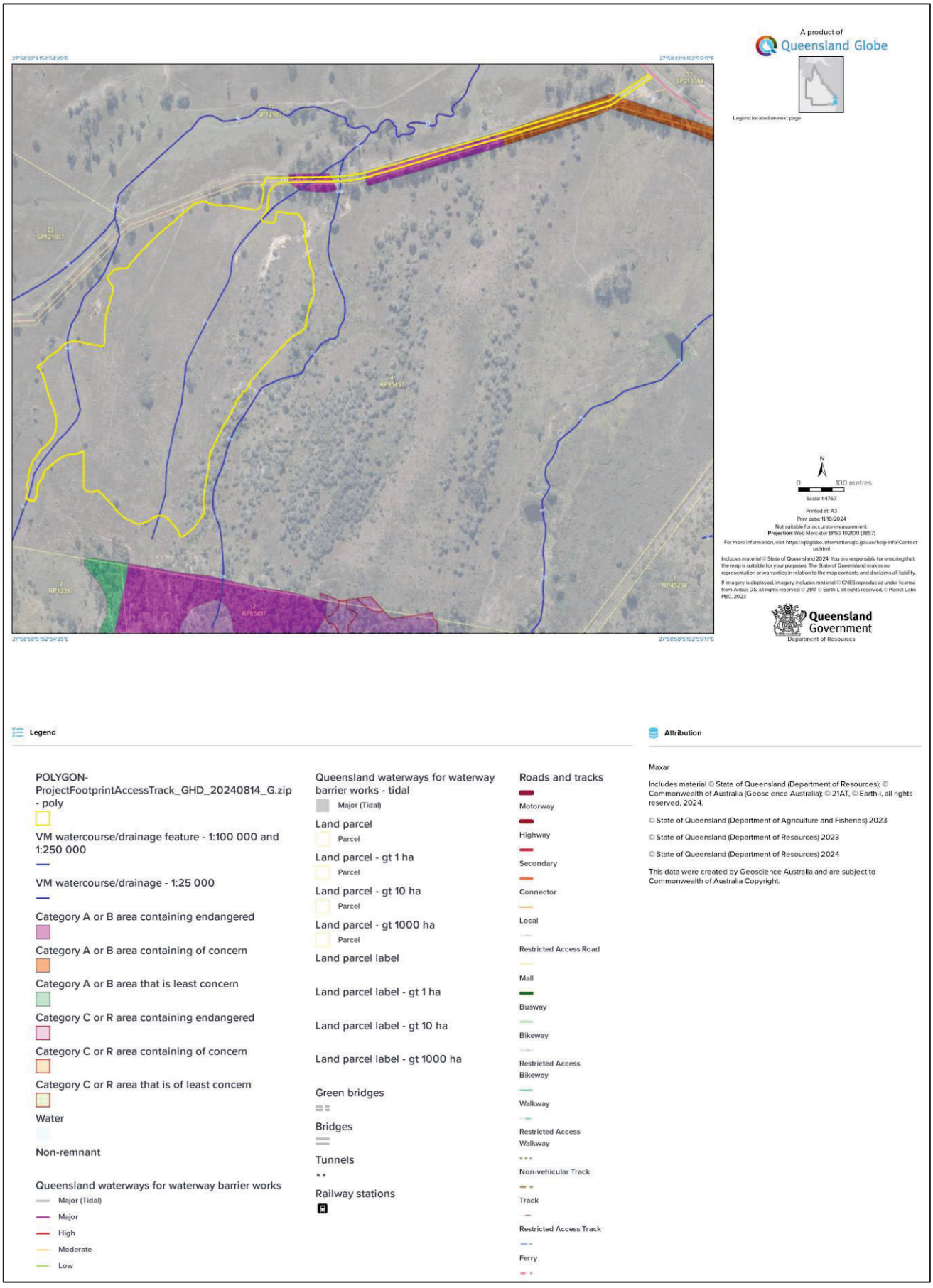
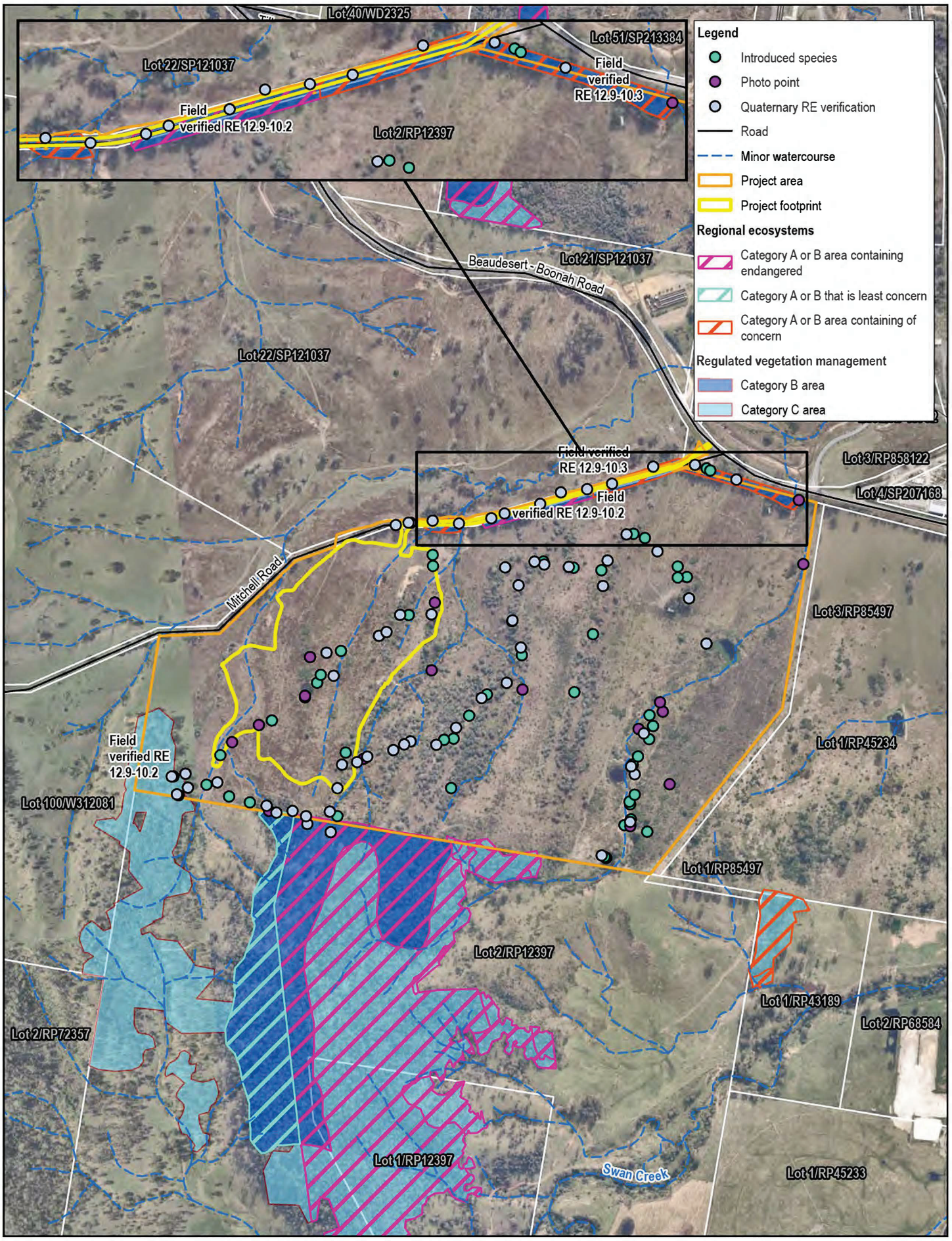


Figure 3.4 Regional ecosystems mapping and Regional ecosystems within the defined distance of a watercourse



Paper Size ISO A4

0 50 100 150 200

Metres

N

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

GHD

SOILCO
The Life-Giving Soil Company

SOILCO Pty Ltd
Bromelton Compost Manufacturing Facility
Terrestrial Ecology Assessment

Project No. 12626213
Revision No. A
Date 14/08/2024

Flora survey effort and results

FIGURE 3.5

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Print date: 14 Aug 2024 - 17:10

Data source: GHD: flora survey effort (2024); DoR: watercourse (2023), regulated vegetation management, cadastre (2024), road (2021); SOILCO: project area(2024); DES: regional ecosystems (2024),nearmap.com: extracted 14/08/2024
Created by: mvandermerwe

3.4.4 Aquatic ecological values

The Project area only supports cleared, ephemeral drainage lines and there are no watercourses, wetlands or permanent water sources present. The aquatic national, state and local ecological values out outlined in Table 3.6.

Table 3.6 Aquatic national, state and local ecological values

Matters	Details
MNES	One potential aquatic MNES, however, was determined as unlikely to occur: – Mary River cod.
MSES	Aquatic Fauna: No fish species were observed during the aquatic field survey. Other aquatic fauna known to occur within the search extent include: – Eastern snake-necked turtle (*Chelodina longicollis*) – Murray river turtle (*Emydura macquarii*) None of the turtle species are listed as threatened under the NC Act. No turtles or evidence of turtle nesting was observed within the Project area during field surveys. Aquatic Flora: Nil aquatic MSES identified Eight different species of aquatic plants (macrophytes) were recorded across five testing points within the study area. Declared Fish habitat area: There are no declared fish habitat areas present in the Project area. Wetlands DESI referable wetlands mapping indicates the Project area is not located in a wetland protection trigger area. However, there are natural wetlands of High Ecological Significance occurring within 5 km of the Project area. These wetlands comprise less than 1 percent of the desktop search extent, with the closest wetland area situated more than 3 km from the Project boundary. Regional ecosystems within the defined distance of a watercourse This matter is mapped over the subject site and alignment with the DAF waterways. The two water features are classified as stream order 1 and will be impacted by the CMF. Refer to Figure 3.4. Water resources: – There are two mapped green (low risk) waterways through the Project area. The waterways ACT1 and ACT2 do not meet *Fisheries Act 1994* definition of a waterway and are not considered to provide fish passage. DAF confirmed that ACT2 appears to be a mapping anomaly. ACT2 feature does not constitute a waterway. DAF considered ACT1 to constitute a waterway as defined under the Fisheries Act 1994 and any waterway barrier works within this waterway require authorisation. The proposed works in this waterway include a dam could be undertaken under the Accepted Development Requirements, provided a spillway in accordance with the design requirements of work type 3.1. Refer to Figure 3.3. – Unmapped water features intersect the Project area and DRDMW confirmed that the unmapped feature is a drainage for the purpose of the Water Act 2000. – Water quality results indicate overall water quality across the ecological Study area was reasonably poor for supporting aquatic species.
MLES	One stream (order 2) and one watercourse buffer (area A) mapped under the Environmental significance overlay for local biodiversity.

Water quality

In situ water quality readings were collected for surface water when present at sites (>0.2 m depth). In situ water quality measurements were recorded using a calibrated YSI Pro DSS multi-parameter water quality meter, and measurements included:

– Water temperature (°C)
– pH (pH units)
– Electrical conductivity (µS/cm)
– Dissolved oxygen (mg/L and % saturation)
– Turbidity (NTU).

Surface water quality data was compared against the water quality objectives in the Logan River Environmental Values and Water Quality Objectives, Part of Basin 145 for Western Logan River Freshwaters, upper freshwaters, moderately disturbed waters (low flow) (DES 2022).

In situ water quality was taken at each site during the surveys (Table 3.7). The parameters were compared to the Western Logan River Freshwaters – upland moderately disturbed water quality guidelines (DES, 2022). There are no water quality guidelines for water temperature; however, water temperatures were within normal ranges expected for the sampling season. Exceedances were recorded at all five sites for dissolved oxygen and turbidity. Dissolved oxygen ranged from 50.6% (ACT2) to 84.1% (ACT5) whilst turbidity ranged from 42.11 NTU (ACT4) to 78.15 NTU (ACT1). Exceedances for electrical conductivity were also recorded at all sites, except for site ACT4 (346 µS/cm). The pH was within the water quality guideline range at each site. These results indicate the overall water quality across site was reasonably poor to support a diverse range of aquatic species.

Table 3.7 In-situ water quality results

Sample Location ID	Temp.	pH	Electrical conductivity	Dissolved oxygen	Dissolved oxygen	Turbidity
Units	**°C**	**pH unit**	**µS/cm**	**mg/L**	**% sat.**	**NTU**
Guideline *	**–**	**6.5-8.0**	**350**	**–**	**85 – 110%**	**11**
ACT1	27.5	7.5	371	5.9	51.2	78.15
ACT2	27.2	7.0	365	5.8	50.6	64.12
ACT3	26.9	6.9	357	6.2	58.6	74.72
ACT4	21.8	7.3	346	6.4	65.8	42.11
ACT5	22.1	7.9	361	6.8	84.1	73.85

* *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*, Logan River Environmental Values and Water Quality Objectives Basin No. 145 (part) – Western Logan River Freshwaters – Upland Freshwaters – Upland Moderately Disturbed waters (Low Flow)

Orange cells note exceedances compared against water quality guidelines.

3.5 Cultural heritage

A cultural heritage and native title duty of care assessment for the subject site was completed by Redleaf to assess the potential risk the project poses to cultural heritage values prior to works commencing. Desktop assessment and field survey findings were used to inform the assessment prepared for the proposed development. It was found that:

– Desktop assessment: There were two known cultural heritage values within 1km of the Project area as recorded on the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP) Indigenous cultural heritage database and register, the commonwealth heritage list, the state heritage list, and the local heritage register.
– Field surveys: There were Indigenous heritage values found across the subject sites including 18 stone artefacts and given risk factors identified in the landscape, the likelihood of further cultural heritage values is considered significantly high.

The Project area has been assessed as a Category 5 risk in accordance with the Cultural Heritage Duty of Care Guidelines under the *Aboriginal Cultural Heritage Act 2003*. Consultation with traditional owners will be required to avoid harm to Indigenous cultural heritage under the *Aboriginal Cultural Heritage Act 2003*. Further details of the assessment completed for the proposed development are presented in the Cultural heritage and native title duty of care assessment in Appendix R.

3.6 Community values

The proposed CMF is located in Bromelton, with the closest town being Beaudesert located approximately 7.5 km east of the subject site. The subject site is zoned industrial under the Bromelton SDA planning scheme. Other industrial facilities are located in vicinity of the site including saleyards and a waste and recycling facility.

The CMF is projected to generate considerable employment opportunities for the local community as well as providing increased recycling opportunities and decreasing local waste going to landfill.

SOILCO has engaged with the local community to inform design and delivery of the proposed project, for more details on community engagement refer to Section 7.

4. Project description

4.1 Facility overview

This SDA application is in support of a MCU development permit for special industry (CMF) at 260 Mitchell Road, Bromelton, formally described as Lot 4 on RP85497.

In developing the layout, SOILCO considered the site conditions, current industry best practices, and SOILCO's experience at its existing facilities. The facility has been designed for all heavy vehicles to access the site using the entry and exit weighbridges with bypass lanes if weighing is not required. It is proposed that entry and exit to the site will be controlled via boom gates and control Closed-Circuit Television (CCTV) that includes a stop-go traffic light system.

Upon entering the site via access from Mitchell Road an access road for staff and visitor passenger vehicles will provide access to the office and amenities reducing the traffic on the weighbridges and the interaction onsite between passenger and heavy vehicles. A maintenance and storage shed will be located adjacent to the office for undercover parking of machinery and maintenance activities to be carried out.

The site will be split into the different processing areas: receival, decontamination and composting utilising Aerated Static Pile (ASP). GO composting utilising an open windrow composting method and a maturation and manufacturing pad for the production of finished compost and soil products. A two-way road through the centre of the site will provide access for heavy vehicles to the different areas of the site while one-way circulation roads around the edge of the site will be utilised by exiting vehicles to minimise vehicle manoeuvring and manage traffic onsite.

Three leachate dams will be constructed to manage stormwater runoff from the three different areas. The captured water will be utilised in the pasteurisation phase of composting or managed through evaporation. An onsite storage dam for freshwater collection is also proposed to provide enough water for onsite operations. Current locations are indicative and will be located to best suit the site grading during the design phase.

Refer to Appendix A for the proposed site layout and proposal plans. The key development aspects are provided in Table 4.1. Refer to Appendix A for proposal plans.

Table 4.1 Key development aspects

Aspect	Details	
Affected lots	Lot 4 on RP85497	
Maximum building height	***Building component***	***Maximum building height***
	Weighbridges, steel construction with concrete ramps in/out	2m
	Office and amenities modular demountable	3m
	Maintenance and storage shed	6m
	Receival building industrial shed	10m
Maximum gross floor area (GFA)	4,715.5m^2 total, the breakdown is provided below:	
	Building component	***Gross floor area***
	Office and amenities modular demountable	115.5m^2
	Maintenance and storage shed	1,200m^2
	Receival building industrial shed	2,400m^2
Site access	The proposed development will have access via a new crossover on Mitchell Road at the site's northern frontage. The new crossover will be designed to accommodate the largest vehicle anticipated to use the site. This location will provide approximately 800m separation to the Mitchell Road / Beaudesert-Boonah Road intersection. The Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road will be upgraded to provide for safe and efficient access to and from the site. A priority-controlled T-intersection will be provided with a Channelised Left (CHL) turn lane and short	

Aspect	Details
	channelised right turn lane (CHR(s)) on the Beaudesert-Boonah Road approaches and a CHL turn lane on the Mitchell Road approach while Mitchell Road will be upgraded to provide a Class 4B – Rural Collector Road with two a 3.5m lane plus 0.5m sealed shoulder in each direction. SOILCO is addressing a separate approval with TMR for the intersection works. Mitchell Road will be upgraded to facilitate the access to the subject site. Scenic Rim Regional Council have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. The upgraded will accommodate B-Double traffic. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from (SRRC for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network.
Parking	The site will provide 20 staff spaces plus 2 spare parking places which will accommodate the 15 staff on-site during normal operations. One of those 22 carpark spaces will be disabled space. Overflow car parking will be available adjacent the office amenities building to accommodate any additional parking required during peak operations. Compliance with AS2890.1 Parking Facilities: Off-street car parking can be confirmed as design development of the site progresses. 4 truck parking spaces will be provided. No visitor parking is proposed as there will be no general public access to the site.
Hours of operation	– Monday – Friday 6am to 6pm – Saturday 6am to 4pm – Sunday and public holidays 6am to 4pm
Staff numbers	Maximum 20 onsite at any one time, refer to Section 4.5.12.
Ancillary works	The proposed development will involve ancillary operational works, which may include a change to ground level (filling/excavation), service connections and infrastructure, vegetation clearing and landscaping, that will be subject to a separate operational works development application. Clearing will be required for construction. A mark-up plan has been developed showing areas that bulk earthworks are taking place and require clearing (Figure 1.6).
Infrastructure and services	– Water: Provision of a 30ML harvesting storage to the west of the operational area. Located within the subject site. – Wastewater: An on-site wastewater treatment system will be installed for the operational phase and will use an advanced all-waste sewage system such as the Envirocycle 10EP advanced secondary wastewater treatment system. – Stormwater: in built water management measures will be incorporated in the design footprint, please refer to the Stormwater management plan provided in Appendix N. – Electricity/telecommunications: An application has been submitted to Energex for electricity supply to the site (reference: CX24BEA1117829Q) via a 12.6 x 8.9m separate earth sub-station for: • New sitewide point of supply • New office building and parking facilities • New internal roadway lighting • Electrical supply to manufacturing equipment (specific locations and loads to be confirmed) • External distribution boards with consideration for future connected electrical plant equipment – Gas: No gas supply at the site is proposed.

4.2 Site infrastructure

Figure 4.1 and Table 4.2 provide an overview of the proposed infrastructure and functional areas of the CMF.

Table 4.2 Proposed infrastructure list

Area	Infrastructure Summary
Entry and exit (access)	– Fully fenced and secure site. – Internal ring road (two-lane middle road, one-way roadway around site for heavy vehicles). – Main roads to be bitumen construction. – Pedestrian/worker walkways around the facility (and for maintenance access to all areas). – Access suitable for kerbside collection vehicles, truck and dog (unhooked), walking floor. (articulated) trucks and B Double Side Tippers.
Site weighbridge	– 2 x 27m (B-Double) weighbridges at site entry providing controlled entry and exit. – Boom gate and traffic light system. – Remote driver interface panels and camera system. – Bypass lanes.
Site office, amenities and parking area	– Site office 9.6m x 6.0m and a 6.0 x 6.0m amenity buildings to suit 20 workers with male and female facilities. Total area: 243.1m^2 – Staff parking spaces for 20 workers plus two spare carparks. – 4 truck parking areas. – Additional parking for maintenance staff at maintenance area. – Concrete, asphalt and compacted roads with water runoff and drainage. – Appropriate signage to coordinate all traffic and mobile equipment movements.
Receival building and decontamination area	– Open, covered receival building with two off-enclosed walls steel construction. – Concrete floors and storage bays for receival of material and storage of shredded product. – 30m (w) x 80m (l) x 9m (h) building with solar power system on roof and rainwater collection tanks. Total area: 2412.6m^2 – Accommodate walking floors (semi), B Doubles and kerbside collection trucks. – Sorting, shredding and screening equipment for decontamination and size reduction of material prior to composting. – Enclosed sorting cabin for the manual removal of. Includes repository containers for the off-site disposal of contamination.
Static pile composting area (aerated static pile) Food and garden organics (FOGO)	– Approximate area 9,000m^2 (18 bays with capacity for up to 9,000 tonnes (17500m^3) at any one time). – Concrete floor with inground air channels to provide air circulation throughout composting materials (to ensure correct oxygen levels and aerobic conditions). – Drainage to leachate holding pond for reuse in composting activities. – Technical area for process air fans, associated ducting and valves. – Container for electrical distribution board, variable speed drives and associated equipment including process computer for supervisory control and data acquisition (SCADA). – Wireless temperature probes providing real-time monitoring of composting materials. – Sprinkler system for irrigation and dust suppression. – Appropriate signage to coordinate mobile equipment, traffic, and material movements, identifying each batch of composting material.
Passive open window composting area (turned aeration) Garden organics	– Receivals area to accommodate walking floors (semi), B Doubles and kerbside collection trucks. – Approximate area 24,000m^2 (25 windrows with capacity for up to 14,000 tonnes at any one time). – Approximately 9,000m^2 area for drop off and load out of material. – Compacted hardstand with water runoff and drainage to leachate ponds. – Dust suppression sprinkler system. – Appropriate signage to coordinate mobile equipment, traffic, and material movements, identifying each batch of composting material. – Windrows to be turned by a Windrow turning machine turning.

Area	Infrastructure Summary
Maturation, product manufacturing and distribution area	– Accommodate walking floors (semi) and truck and dog vehicles. – Compacted hardstand with water runoff and drainage to leachate ponds. – Approximately 51,000m^2. – The area includes capacity for stockpiling of material following active composting. Maturation aims to age material and decrease moisture content from >40% to >25%. – Turning of maturation piles utilising loaders, excavators, or Windrow turner. – Screening and blending of materials to produce finished products for sale. Mobile screening equipment to be used. – Storage of finished products in batches/ bunkers. – Dust suppression sprinkler system. – Appropriate signage to coordinate mobile equipment and traffic movements as well as the loading, unloading, and mixing of materials.
Workshop and fuel storage area	– Workshop building partially enclosed 2-3 bays. 25m (w) x 48m (l) x 6m (h) steel construction with solar system on roof and rainwater collection tanks. Total area: 1200 m^2 – Concrete floor. – Bunded storage of engine oil 200L, hydraulic oil 200L, waste oil 1,000L and degreaser 2 x 15L drums. – Above-ground self-bunded diesel storage and dispensing tank 34000L. – Above-ground Adblue storage and dispensing tank 5,000L located adjacent to the shed. Both self-bunded housing.
Leachate ponds	– Three appropriately sized leachate holding ponds with high-density polyethylene liners. – Pumping and irrigation arrangements for delivery of clean and dirty water sources to the composting manufacturing activities.
Freshwater storage dam	– Construct a freshwater dam for the collection and storage of “fresh” water to be used for irrigation and composting process purposes. – Pumping and distribution system to site.
Fire services area	– Fire storage tanks and hydrant pump/booster at front entry including hydrant ring main around site as required.
Electricity supply	– Power supply and transformer from existing infrastructure on Beaudesert Boonah Road along Mitchell Road to CMF site. – Electrical infrastructure on CMF site.

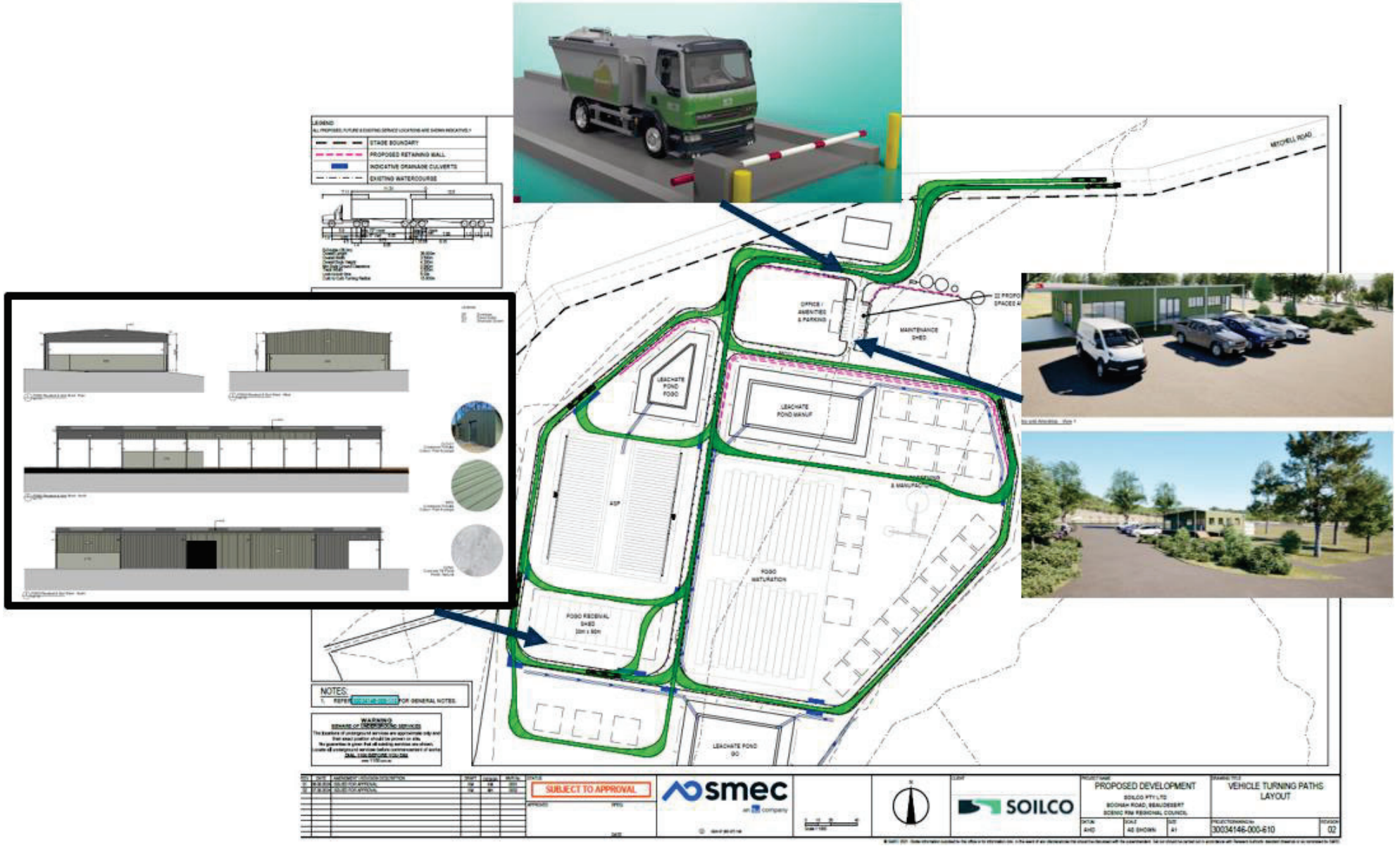


Figure 4.1 *Internal road layout for Bromelton CMF*

4.3 Site infrastructure description

4.3.1 Site access (entry and exit)

The Project area is to be accessed via the Beaudesert-Boonah Road and its intersection with Mitchell Road. Mitchell Road is an unconstructed road, currently awaiting separate approval from Scenic Rim Council and will be constructed prior to the commencement of the facility operation.

Heavy vehicles (including B-Doubles) entering the Project area, will do so via the weighbridge before being directed to the appropriate area on site. Bypass lanes will be constructed to reduce the unnecessary use of the weighbridges when not required. Products being delivered to or distributed from the facility enter and exit via the weighbridges located at the entry to the Site. The weighbridges are used to capture the following data:

– Date and time of delivery
– Type of material (e.g. sand, soil, green waste, wood waste, food waste)
– Source of material (e.g. kerbside, commercial)
– Customer name
– Vehicle registration and owner
– Purchase order or contract identifier
– Source docket (if applicable)
– Gross, tare and net weight (tonnes)
– Any other information required under legislation.

All commercial vehicle registration and owner details would be required prior to unloading at the facility to ensure the job number and vehicle are identified in SOILCO's weighbridge system to ensure the traceability of the end product.

Incoming loads will be inspected for conformity and consistency and any non-conforming materials will be isolated and then disposed of at an appropriately licensed facility.

Internal bitumen roads will provide onsite access of vehicles to the different processing areas. This will consist of a two-way central road with one-way ring roads around the perimeter of the site.

4.3.2 Office, amenities and parking

Adjacent to the weighbridge and site entrance are the site office and amenities. The buildings consist of an office (measuring approximately 9.6m (w) x 6.0m (l) x 3m (h) adjacent to the weighbridge, as well as an amenity building (measuring approximately 6.0m (w) x 9.6m (l) x 3m (h)) adjacent to the site entrance. Covered external awnings will provide all weather access between the two buildings. These amenities would utilise a pump out tank or irrigation system, solar electricity, and potable water infrastructure via UV filters on water tanks. Up to three office staff will work from the office full time and the amenities will handle up to 20 staff. An outdoor landscaped seating area with shade is proposed to provide an outdoor sitting and meeting area for staff.

Staff parking will be appropriately signposted and is located adjacent to the entrance of the site in the vicinity of the weighbridge, office and amenities. Parking will be required for up to 20 staff with provision of 2 spare carpark places.

4.3.3 Receival building and decontamination

The receival building will be a steel portal frame construction 30m (w) x 80m (l) x 9m (h) with colorbond cladding on the walls and roof. A concrete floor will be utilised to handle traffic of heavy vehicles, storage of organic material and support fixed machinery. The building will have a concrete storage bay at one end for incoming material storage and another for decontaminated and shredded material storage prior to transfer to the ASP. It is proposed to fully enclose 2 of the walls only to contain windblown litter with wall locations determined by the prevailing wind direction. A solar power system will be installed on the roof and a water tank will be located adjacent to the

building for rainwater collection. Natural light will be provided by polycarbonate roof sections and the building will be fitted with LED high bay lights.

The building will allow heavy vehicles to drive through and drop off material into the receival area including Semi-trailer walking floors, B-double side tippers and compaction collection vehicles. Inside a fixed sorting line consisting of an infeed hopper and conveyor, trommel screen, manual sorting cabin, overbelt magnet, windsifter and shredder will be housed to effectively inspect and decontaminate the incoming material (Figure 4.2).

Figure 4.2 ***Example of sorting, shredding and screening equipment for decontamination and size reduction of material prior to composting***

4.3.4 Forced aeration pad – ASP

The Forced Aeration Pad consists of a 9,000m^2 concrete pavement arranged with 18 bays that house a series of parallel polyvinyl chloride (PVC) pipes laying lengthwise, incorporated in the concrete. The pipes have tapered plastic nozzles (spigots) that provide the mechanism for the supply of air and collection of leachate known as the “aeration floor”. Two fresh air supply fans are connected to the PVC pipes by a series of ducts, each servicing nine bays. Pressurized air flows through the material mixture from the spigots ensuring intensive contact between the air and the mixture. In this way, the composting process can be controlled, and aerobic conditions can be maintained in the complete batch of material being processed.

The airflow in each individual bay can be controlled by an actuator to adjust air pressure and flow rate. The system is controlled from a technical area contained within a prefabricated shipping container immediately to the rear of the pad. Each aeration bay has dedicated probes for wireless, real-time monitoring of temperature to ensure each batch is compliant with relevant Australian Standard and Department of Environment, Science and Innovation (DESI) requirements. The process computer allows the operator to visually manage system settings and produce specified batch reports, the system also provides remote access for offsite monitoring and maintenance.

4.3.5 Passive open windrow pad

The open windrow pad will be approximately 24,000m^2 with an area of 9,000m^2 for GO receival and finished compost transfer. Compacted crushed rock will be used to form the hardstand area and the pad will be graded to drain water run off to the leachate collection dam. A number of water supply connections from the leachate dam

and the fresh water supply will be positioned around the area for irrigation of the piles. The pad will be designed to handle vehicles such as Windrow turners, front end loaders, Semi-trailers, B double side tippers and compaction waste collection vehicles.

4.3.6 Maturation, manufacturing and distribution area

A proposed hardstand area of 51,000m^2 will be utilised to mature and store the compost, receive and store VENM, Screen and blend finished compost, mulches and soils. The pad will be constructed from crushed compacted rock and will be graded to drain water run off to the leachate collection dam.

This area would be for the manufacturing, storage and distribution of landscape products, and the storage and loading of these products for distribution to market. Fresh water supply and general power connection points will be positioned around the area for irrigation and operation tasks. Mobile plant and heavy vehicles will access the and manoeuvre in this area while mobile screening equipment will be utilised in the manufacturing process.

4.3.7 Workshop and fuel storage area

The workshop will be a 25m (w) x 48m (l) x 6m (h) shed of steel construction with colorbond cladding. Up to three bays will be fully enclosed. The rest of the shed will be open for vehicle access and storage. The floor will be concrete with bunding around the outside of the shed. Maintenance activities will be carried out on mobile plant and equipment in the undercover area.

Self-bunded diesel and Adblue tanks will be installed adjacent to the workshop with a bunded area for fuelling of vehicles onsite. Storage of oils and lubricants for the maintenance of plant and machinery will be located within a covered, bunded area within the shed.

Workshop and fuel storage area will contain the following substances: engine oil, hydraulic oil, waste oil, degreaser, diesel, Adblue. The storage will be less than 200L or 200kg.

4.3.8 Surface water and leachate management

The CMF will have a designated leachate management system. Leachate ponds are proposed to manage dirty water generated within the receivals building, as well as from the ASP, the passive open windrow composting area and the manufacturing storage and distribution areas. Three ponds are proposed to handle the leachate runoff from the site and they will have a total capacity of 13,497m^3. To prevent leachate stored in the ponds from percolating into the groundwater system, the ponds will be lined according to the DESI Best Practice Environmental Management Guideline ERA 53(a) Organic material processing by composting, Version 1.02:

– 600 mm thick recompacted clay with a permeability of less than 10 m/s; or
– A high-density polyethylene geomembrane liner with a minimum thickness of 1.5 mm

Leachate ponds will be positioned in the most suitable site location, based on existing site topography and grading to allow gravity drainage from process areas to the ponds, as shown in Figure 4.3. Each pond will be fitted with a pumping system to deliver water to the composting areas and will be fully fenced to limit fauna and human access.

Perimeter drains within each operational area in the form of trapezoidal open channel swales will be utilised to effectively transport any leachate runoff to sediment traps prior to diversion into a designated leachate pond. Retaining walls have been proposed on site design to minimise the runoff and erosion flow towards North. Next to the main site entrance there is a proposed bioretention basin to retain natural sediment flow path.

4.3.9 Freshwater storage dam

There will be one freshwater dam adjoining the CMF which will collect and store freshwater to be used for composting process purposes. There will also be a pumping and distribution system to distribute the water around the CMF (Figure 4.3).

A freshwater dam with overflow spillway will be constructed to store uncontaminated water runoff on the site. The water will be used in the composting process and will be distributed to the composting and manufacturing areas by a pump and piping system. The dam will be located in the most suitable location for the site drainage and

topography for efficient water collection. The storage was sized at 30ML based on water balance optimisation considering the catchment available for the storage and evaporation from the dam. Refer to the Appendix C of the Surface Water Impact Assessment (Appendix N) for the preliminary water balance calculations.

Surface water monitoring on the freshwater storage dam will be undertaken during the operational phase to ensure compliance with assessment criteria.

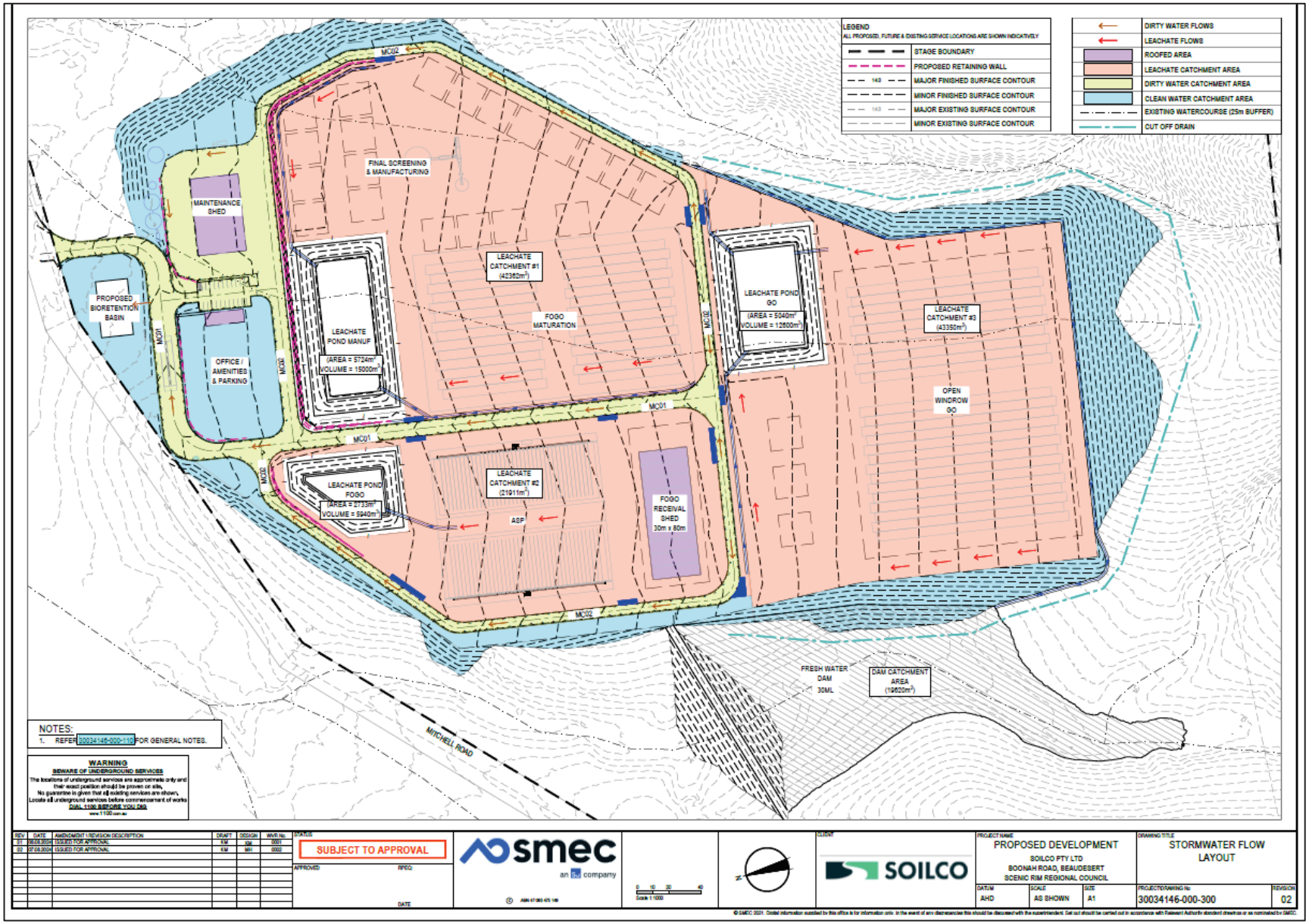


Figure 4.3 Stormwater flow layout Bromelton CMF

4.3.10 Fire services area

Fire storage tanks and a hydrant pump/booster will be located at the front entry including a hydrant ring main around the site as required.

4.3.11 Electricity supply

Power supply for the CMF will be via a transformer from existing infrastructure on Beaudesert Boonah Road along Mitchell Road. There will also be electrical infrastructure within the CMF.

4.3.12 Residual waste management

All residual waste separated from organics in the sorting cabin and destined for landfill or recycling (e.g. brick, concrete, plastic, metal etc.), would be stored in appropriately sized bins and transported from the site as required to a suitably licensed facility for further processing or disposal.

4.3.13 Wastewater management

The peak daily design volume for the CMF is 4.4 equivalent persons (EP) which equates to 600 l/day. Wastewater is proposed to be managed through the use of an Advanced Secondary all-waste sewage treatment plant such as the Envirocycle 10EP advanced Secondary Wastewater treatment system. Treated effluent would be discharged through an irrigation system using drippers at a designated area within the CMF in accordance with AS1547:2000 On-site domestic wastewater management. The land application area for treated effluent is 220 m^2 and consists of soils containing clayey sand with low plasticity. The design irrigation rate has been calculated at 21 mm/week.

The wastewater irrigation area would include warning signs complying with AS1319-1994 Safety signs for the occupation environment. Signs would be placed at the boundaries of the designated irrigation area in two places which would be clearly visible to property users with wording such as “Recycled Water – Avoid Contact – DO NOT DRINK”. The wastewater irrigation area would require specific maintenance including regularly mowing, exclusion of vehicles driving over the area and exclusion of livestock to access the area.

Further details are provided in the Site and Soil Evaluation undertaken for the on-site wastewater treatment and effluent disposal for the Project including in Appendix U.

4.3.14 Stormwater management

A Surface Water Impact Assessment (Appendix N) was prepared for the Project using several guidelines for managing water quality including:

- DESI’s Model Operating Conditions for ERA 53(a) – Organic material processing by composting.
- Seqwater’s Development Guidelines For Water Quality Management in Drinking Water Catchments 2017.
- Scenic Rim Planning Scheme 2020.
- State Planning Policy 2017, Appendix 2: Stormwater management design objectives.
- DESI’s Procedural guide, releases to waters from land development sites and construction sites 2,500 m^2 and greater.
- The International Erosion Control Association’s Best Practice Erosion and Sediment Control document, 2008 and 2018.
- New South Wales Flood Risk Management Manual, 2023.
- Australian Rainfall and Runoff, 2019.

A Surface Water Management Plan was developed as part of the Stormwater Impact Assessment, which proposes several measures to be built into the CMF as shown in Table 4.3.

Table 4.3 Proposed surface water quality management measures

Water quality impact/ management	Project phase	Management measures
Separation of water types	Operation	To comply with the Model Operating Conditions ERA 53(a) Organic Material Processing (MOC), the following design measures will be incorporated to prevent stormwater being contaminated by the activity or to direct water that is contaminated to treatment and retention measures: – Diversion of upstream run-on around the CMF to separate stormwater from water that has been in contact with organic material used in the composting process – Designation of respective leachate and stormwater catchments within the operational site, with separate stormwater conveyance systems.
Leachate management	Operation	– Provision of 30 ML of contact water storage with disposal via reuse in the pasteurisation phase of the process. No proposed active release of leachate and no overflow up to a design standard rainfall of 900 mm falling within a 6 month period. – Leachate will only be reused in pasteurisation stage of the CMF process. – Following the MOC and the NSW guideline Environmental Guidelines, Composting and Related Organics Processing Facilities, NSW DEC 2003, a containment of the 10-year 24-hour event (152 mm) was taken as the initial minimum sizing and identified to be approximately 17 ML assuming 100% runoff. However, it was identified that the site would be most sensitive to longer durations of regular rainfall rather than a shorter intense storm. Therefore, approximately twice (i.e. 30ML) the volume of the minimum sizing was adopted. This, based on water balance calculations considering a 6-month period in which 900 mm of rainfall occurs. The preliminary water balance calculations are shown in Appendix C of the Surface Water Impact Assessment (Appendix N)
Stormwater management	Operation	– Provision of a typical urban stormwater treatment train, including 500 m^2 of bio-retention filter area and a Gross Pollutant Trap. – Stormwater will be reused in the composting process within the CMF footprint.
Water sourcing	Operation	– Provision of a 30 ML harvesting storage to the west of the operational area. – Truck water tanker delivery during dry periods to meet water supply needs.
Impact from flooding	Operation	The CMF's operational site is located outside the 1% AEP flood extent for the identified flow paths adjacent to the site. ACS Engineers has prepared design documentation for the upgrade of Mitchell Road including provision of appropriate flood protection and flow conveyance.
Impact on flooding	Operation	Leachate storages to contain longer duration storms.
Separation distances from existing flow paths	Construction and operation	– 25 m setback from flow paths, other than the harvesting storage – Location of site operational activities above the 1% AEP.
Erosion and sediment control	Construction	– Construction phase ESCP prepared as a component of the facility design.

4.4 Site construction

4.4.1 Construction

There is no demolition of existing buildings or other structures required within the project footprint. The construction program will be carried out over approximately 14 months. The proposed construction hours are provided in Table 4.4. The proposed construction equipment is detailed in Table 4.5.

Table 4.4 Standard construction hours

Day	Construction noise guidelines
Monday – Friday	7am to 6pm
Saturday	8am to 1pm
Sunday and public holidays	No work

Table 4.5 Proposed construction equipment

Equipment	Notes
D10 dozer	Rock ripping and shifting material
20T excavator	Excavation and construction works
5T excavator	Excavation and construction works
Skit steer loader	Shifting material around site, loading vehicles
Truck and boggey	Deliveries, shifting equipment and materials around site
Dumpy tipper	Shifting construction materials around site
Concrete pump	Concrete delivery in slab construction and retaining walls
Concrete trucks	Concrete delivery to site
Water truck	Wet down work areas, dust control
50T slew crane	Building construction and equipment installation
25T franna crane	Building construction and equipment installation
Scraper	Grading
Vibrating pad foot roller	Compacting material
Boom and scissor lifts	Building construction and equipment installation
Forklift	Building construction and equipment installation
Drum roller	Compacting material
Delivery vehicles, flat beds and semi-trailers	Delivery of machines and equipment to and from site

4.5 Site operations

4.5.1 Description of Environmentally Relevant Activities (ERAs) associated with the Project

This section provides a detailed description of the ERAs required for the operation of the Project:

– ERA 33(1): Crushing, milling, grinding or screening more than 5,000t of material in a year.
– ERA 53(a) – Organic material processing.
– ERA 54(2)(c) – Mechanical waste reprocessing.

4.5.1.1 ERA 33 Crushing, milling, grinding or screening

The Project involved the carrying out of ERA 33(1): Crushing, milling, grinding or screening more than 5,000t of material in a year. As discussed in Section 2.3.7, as part of the operation of the CMF, SOILCO will receive, process, store and blending of up to 150,000 tpa of sand and soil products for manufacturing referred to as VENM. VENM will be received and stored as required based on demand of finished products.

The CMF will import up to 150,000 tpa of VENM for use in soil blends. Where possible, VENM would be imported in trucks travelling to the CMF to collect a load of SOILCO products. The practice of backloading would therefore inimizes reworking material to reduce dust generation. VENM would be stored in bunkers or piles on the manufacturing pad ready for blending with mature compost. VENM would undergo a screening process before being blended with the compost.

VENM would be used where required as part of the maturation, product manufacturing and distribution process.

As previously discussed, composted material is screened utilising mobile screening equipment to produce a soil conditioner that may be sold directly or blended with VENM to manufacture a range of products. Final products will be tested at the frequency and parameters stipulated in the relevant standards prior to sale and beneficial reuse.

SOILCO has developed a suite of mitigation measures to ultimate/reduce and/or minimise the impact to the local community and surrounding environment and they are outlined in Section 4. The construction mitigation measures outlined in Section 5.2 will be incorporated into the contract documentation to make sure construction activities are managed in a way to minimise impacts to the environment. Specific environment management measures will be incorporated into the CEMP. The operational mitigation measures outlined in Section 5.3 will be incorporated into Operational Environmental Management Plan (OEMP) to make sure operational activities are managed in a way to minimise impact to the environment.

4.5.1.2 ERA 53(a) Organic material processing

The Project involves carrying out ERA 53(a) as it will include processing of more than 200 tonnes of organic material in a year. As discussed in Section 2, two composting technologies will be used to handle different feedstocks:

– Passive open windrow method to compost 100,000 tpa of GO
– ASP method to process up to 150,000 tpa of FOGO.

The key steps in the two composting technologies are presented below.

– Pre-treatment – Any organic material received that has not been decontaminated and size reduced will first be processed through a decontamination line and shredded prior to ASP composting.
– Composting process (ASP) – Material is put on an aerated pad for pasteurisation and composting in batches of around 1000 cubic metres (500 tonnes).
  The material will be on the ASP for 18-21 days, depending on weather and seasonal fluctuation. Composting conditions must be controlled to optimise the pace of decomposition to obtain stable compost in the shortest feasible timeframe.
– Composting Process GO (Open Windrow) – Aerated windrow composting involves mechanically rotating the material to maintain aerobic conditions. Shredded material will be dumped off at the specified reception area

or windrow pad. The load will be visually examined for contaminants before being mixed and shaped into windrows using a front-end loader. Windrows would be rotated at least three times during an eight-week period with a windrow turner. Temperatures will be monitored to keep the compost at the correct temperature for pasteurisation. Water will be fed to the heaps to maintain optimal moisture levels and reduce dust throughout the composting process.

– Maturation, Product Manufacturing and Distribution – Compost will be kept in batch-size mounds or open windrows on the production PAD to let the material to develop.
– Water Balance – Water must be introduced to composting operations to keep the heaps at the proper moisture levels. The proposal is to use dirty water from leachate ponds for pasteurisation and pure water for maturation.
– Surface Water and Leachate Management – The planned solution for leachate storage and management includes three ponds on-site:
  Pond 1 – manages surface water that comes into touch with compost material in the manufacturing, storage, and distribution areas.
  Pond 2 – will handle surface water that comes in touch with compost from the passive composting area and ASP.
  Pond 3 – will handle surface water that comes in touch with compost from the open windrow GO area.
– Residual Waste Management – Residual waste will be separated from organics in the sorting cabin (e.g. brick, concrete, plastic, metal) will be stored in appropriate bins and transported to a licenced facility for processing or disposal.

SOILCO has undertaken a number of technical studies, as part of the FEED phase for the Project to determine the potential impacts associated with ERA 53 as discussed above. SOILCO has developed a suite of mitigation measures to ultimate/reduce and/or minimise the impact to the local community and surrounding environment and they are outlined in Section 4. The construction mitigation measures outlined in Section 5.2 will be incorporated into the contract documentation to make sure construction activities are managed in a way to minimise impacts to the environment. Specific environment management measures will be incorporated into the CEMP. The operational mitigation measures outlined in Section 5.3 will be incorporated into the OEMP to make sure operational activities are managed in a way to minimise impact to the environment.

4.5.1.3 ERA 54(2)c – Mechanical waste reprocessing

The Project involves carrying out ERA 54(2)c as it will include mechanically reprocessing more than 10,000 t per year of general waste. The passive open windrow method for composting triggers ERA 54. As discussed in Section 4.3.5, the open windrow method will involve mechanically rotating the material to maintain aerobic conditions. Shredded material will be unloaded in the receival building, where it will mechanically sorted before being mixed and shaped into windrows using a front-end loader. Windrows would be rotated at least three times during an eight-week period with a windrow turner. Temperatures will be monitored to keep the compost at the correct temperature for pasteurisation. Water will be fed to the heaps to maintain optimal moisture levels and reduce dust throughout the composting process.

SOILCO has undertaken a number of technical studies, as part of the FEED phase for the Project to determine the potential impacts associated with ERA 54 as discussed above. SOILCO has developed a suite of mitigation measures to ultimate/reduce and/or minimise the impact to the local community and surrounding environment and they are outlined in Section 4. The construction mitigation measures outlined in Section 5.2 will be incorporated into the contract documentation to make sure construction activities are managed in a way to minimise impacts to the environment. Specific environment management measures will be incorporated into the CEMP. The operational mitigation measures outlined in Section 5.3 will be incorporated into the OEMP to make sure operational activities are managed in a way to minimise impact to the environment.

4.5.2 Facility input material and composting processes

4.5.2.1 Material throughput

Material receival is expected to vary significantly across the year, with more compost being processed in the summer months than the winter months. The peak compost material throughput occurs in January and March, and the lowest material throughput occurring in June and July. The amount of compost at the facility would likely correlate to odour potential. An annual breakdown of organic materials processed at the facility is provided in Table 4.6.

Table 4.6 Annual breakdown of GO and FOGO processed across a year

Month	Estimated receival of material (tonnes per period)		Total material received Tonnes per annum
	GO	FOGO	
Jan	9,437	14,155	23,592
Feb	8,692	13,038	21,730
Mar	9,557	14,335	23,892
Apr	8,278	12,416	20,694
May	7,900	11,850	19,750
Jun	6,256	9,384	15,640
Jul	5,955	8,932	14,887
Aug	7,613	11,420	19,033
Sep	7,985	11,977	19,962
Oct	8,707	13,060	21,767
Nov	10,825	16,237	27,062
Dec	8,797	13,195	21,992
Total per year	**100,000**	**150,000**	**250,000**

4.5.2.2 Material types

GHD has undertaken a review of potential feedstock types to be accepted at the facility with particular reference to *Best Practice Environmental Management Guideline ERA 53(a) – Organic material processing by composting* (DESI, 2024). It is important to note that feedstocks would be received and processed within the material processing building and that after this stage, all material will be well mixed and homogenised. Any feedstock with a higher odour risk rating would comprise a small fraction of the total and once mixed would have a much lower odour potential. The majority of all feedstocks accepted at the site will be green waste which has a low odour potential. The wastes to potentially be accepted and their corresponding odour rating are provided in Table 4.7.

No feedstock with a ‘very high’ odour rating will be accepted onsite. The only feedstocks with a ‘high’ rating accepted at the site are food organics for composting and small amounts of animal manure (up to 200 tonnes) for blending purposes only.

Table 4.7 Odour rating of composting feedstock (ERA 53(a)) – Organic material processing by composting

Feedstock	Examples	Odour rating	To be used at Bromelton CMF (y/n)
Abattoir waste	Meat processing leftovers, bone material, blood, tallow waste, abattoir waste including animal effluent and residues from meat processing, including abattoir effluent, liquid animal wastes (blood) and sludge	Very high	No
	Paunch material	High	No

Feedstock	Examples	Odour rating	To be used at Bromelton CMF (y/n)
Animal manure	Horse manure, chicken manure, cow manure, livestock manure, or any manure produced by animals, wastewater from holding yards	High	In small amounts for blending purposes only. No more than 200 tonnes onsite at any one time.
Animal waste and animal processing waste	Any dead animals or part/s of dead animals, remains of animals or part/s of remains of animals (e.g. chickens from poultry farms), egg waste, milk waste, mixtures of animal manure and animal bedding organics	Very high	No
Bark, lawn clippings, leaves, mulch, pruning waste, sawdust, shavings, woodchip and other waste from forest products	Cane and sorghum residues including bagasse, forest mulches, cypress chip, green waste, mill mud71, pine bark, sawmill residues non-treated (including sawdust, bark, wood chip, shavings etc.), tub ground mulch (from land clearing and forestry waste), peat, seed hulls/husks, straw, and other natural fibrous organics, wood chips (forestry waste and land clearing, household maintenance), wood waste (including untreated pallets, offcuts, boards, stumps and logs); worm castings suitable for unrestricted use	Low	Yes
Biosolids	Biosolids that are not stabilised biosolids	Very high	No
	Stabilised biosolids	Medium	Yes
Cardboard and paper waste	Paper mulch	Low	Yes
	Paper pulp effluent, paper sludge dewatered	Medium	Yes
Compostable polylactic acid (PLA) plastics	Compostable plastics produced in accordance with: (a) AS 4736:2006 (Biodegradable plastics) or the most recent or replaced version of that standard or (b) AS 5810:2010 (Biodegradable plastics – Biodegradable plastics suitable for home composting) or the most recent or replaced version of that standard.	Low	Yes
Ammonium Nitrate, dewatered fertiliser sludge		High	No
A substance used for manufacturing fertiliser for agricultural, horticultural or garden use	Fertiliser water and fertiliser washings, stormwater from fertiliser manufacturing plants containing fertiliser washwater	Medium	No
Fish processing waste	Fish bones and other fish remains/leftovers, wastewater from fish processing	Very high	No
Food and food processing waste	Expired/past used by date non-protein-based food from supermarkets, expired beer, vegetable oil wastes and starches, vegetable waste, yeast waste, food processing effluent (wastewater) and solids (including sludges) from non-protein based food	Medium	Yes
	Food processing effluent (wastewater) and solids (including sludges) from protein-based food	Very high	No
	Food organics, expired/past used by date protein-based food from supermarkets, brewery and distillery effluent and waste	High	Yes
	Expired soft drinks, molasses waste, grain waste (hulls / waste grains), starch water waste, sugar and sugar solutions	Low	Yes
Grease trap waste	Oil and grease waste recovered from grease traps	Very high	No

Feedstock	Examples	Odour rating	To be used at Bromelton CMF (y/n)
Green waste	Leaves, grass clippings, prunings, tree branches from household maintenance	Low	Yes
Inorganic additives with beneficial properties	Bentonite	None	Yes
	Crusher dust	None	Yes
	Drilling muds (non-CSG and no additives)	None	No
	Gypsum	Medium	Yes
	Lime and lime slurry (inert)	None	Yes
Poultry processing waste	Feathers, meal and bone leftovers, egg waste including poultry processing poultry abattoir effluent and sludges	Very high	No
Soils	Acid sulfate soils and sludge	High	No
	Clean soil, clean mud, sand	None	Yes
Stormwater	Low level organically contaminated stormwaters or groundwaters (tested)	Low	No
Wood waste from untreated timber	Untreated pallets, offcuts, boards, stumps and logs, sawdust, shavings, timber offcuts, crates, wood packaging	Low	Yes
Mushroom compost and mushroom growing substrate		Medium	No

4.5.2.3 Composting process

Two composting technologies will be utilised to handle different feedstocks:

– 100,000 tpa of garden organics (GO) composted by Passive Open Windrow (OW) method.
– 150,000 tpa of Food Organics and Garden Organics (FOGO) is to be processed on a Forced Aeration Pad system (ASP).

Wood wastes and manure will make up a small portion of the composting feedstocks and will be blended with the GO & FOGO based on onsite capacity.

VENM will be received and stored as required based on demand of finished products.

Due to the seasonal nature of feedstock generation, up to 15% of the total annual waste may be received in any one month. This would typically occur around spring and autumn.

The Proposal would allow for the organic wastes listed above to be imported to the site with no prior processing. The facility would utilise aerobic composting methods that include the following control points:

– Receipt – unloading in the nominated area depending on incoming material type. Inspection of material.
– Decontamination – sorting and shredding of organic materials.
– Batching – placement on primary and/or secondary composting pad.
– Pasteurisation – controlled microbiological transformation of organic materials under aerobic and thermophilic conditions for a designated number of days, turns and specified temperature (above 55°C).
– Composting – aerobic conditions continued to be maintained as per pasteurisation for a designated number of days, turns and specified temperature (below 55°C), conformance to Resource Recovery Orders (RRO) assessed prior to removal.
– Batch release – removal from composting pads and stockpiling for maturation.
– Maturation – aging of product in stockpile provides additional time to achieve “compost” status.

  Although the compost temperature is close to ambient during the curing phase, chemical reactions continue to occur that make the remaining organic matter more stable and suitable for use with plants. Drying of material from above 40% moisture during pasteurisation and composting to approximately 25% prior to screening and quality release is also achieved.

– Production – blending with other inputs to create products for sale and distribution.
– Quality release – Screening and stockpiling of finished goods for testing to relevant standards then distribution following conformance.

Refer to Figure 4.5 for a visual summary of the operational process.

Figure 4.4 Proposed composing processes

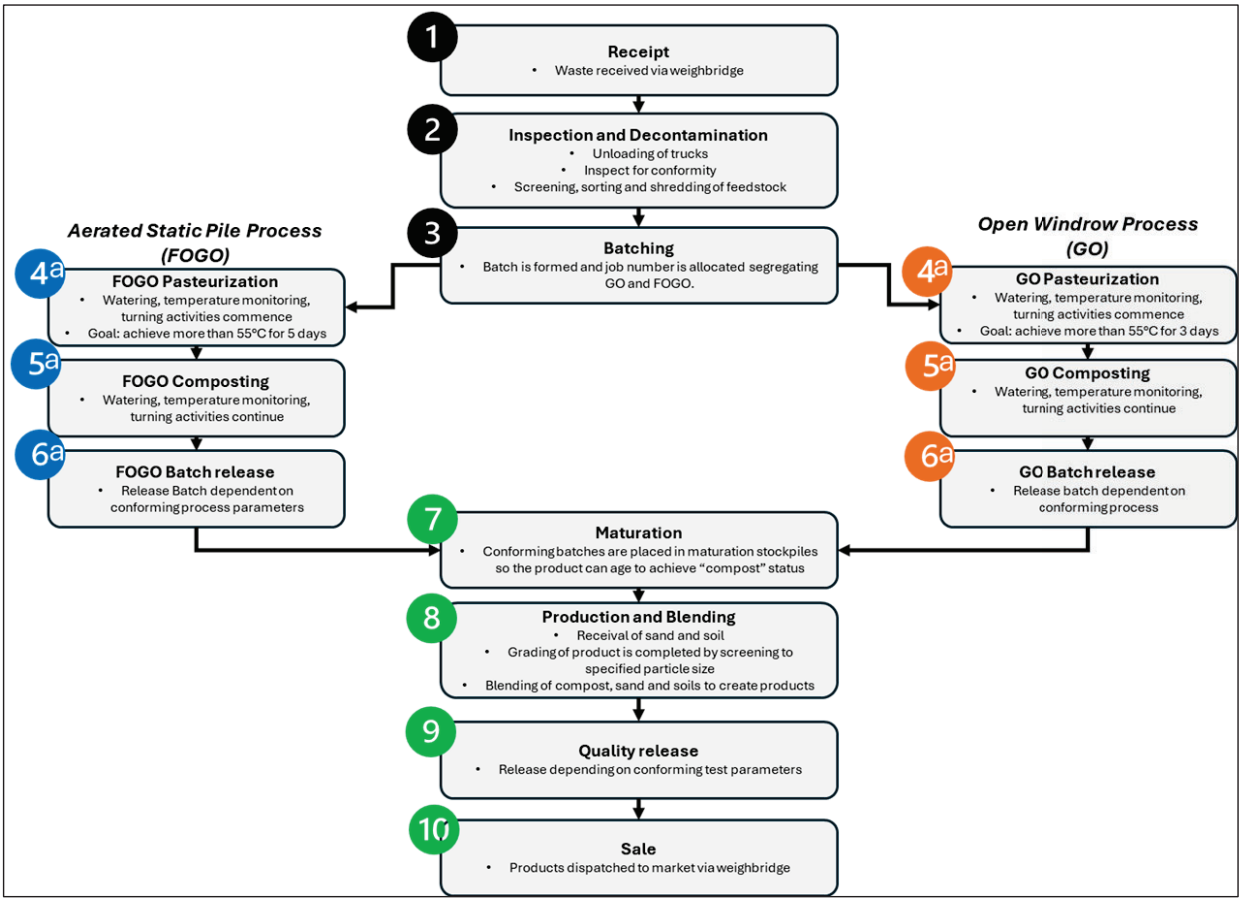


Figure 4.5 Proposed composting flow chart

4.5.3 Pre-treatment

Due to the nature of the materials received at the Facility and industry collection methods, any organic material received that has not been decontaminated and size reduced will first be processed through a decontamination line and shredded prior to ASP composting. Material will be received in the drop off area of the decontamination building. The material will be visually inspected on the floor to ensure there is no excess contamination or hazardous materials in the load. Heavily contaminated loads, or loads containing hazardous materials will be rejected and disposed of to an appropriately licensed waste facility. A concrete bunker with 1200m^3 of capacity will allow for material to be stockpiled prior to being processed.

The decontamination line (refer to Figure 4.6 below) will consist of an infeed hopper with metering device, incline conveyor, trommel screen, manual sort cabin with sort conveyor for four people, overbelt magnet, windsifter and shredder. A front end loader will feed the product into the plant. Contamination removed by the manual sorters and the windsifter will be discharged and stored in bins and disposed of once full. Ferrous material is removed by the overbelt magnet and will be stored in a bin for recycling. The organic material will then be processed through a shredder to produce the ideal sized feedstock for the composting process. Product will be stored in a bunker, before being loaded onto the ASP.

Raw materials would be kept isolated from processing batches and finished product stockpiles. Any equipment used in the receiving process would be thoroughly cleaned of visible soil or plant debris before being used for pasteurised/mature batches or finished product.

Figure 4.6 Decontamination line

Any leachate generated in this initial stage will be absorbed using the same waste that is being categorised, as organic waste is highly absorptive material and can have significant water holding capabilities. No drains have been included in the building, as no leachate will escape the receival shed. Refer to project drawing 30034146-000-300 in Appendix A.

4.5.4 Composting process – ASP

SOILCO's primary composting process for putrescible materials utilises ASP methods. Material is placed on the aerated pad for pasteurisation and composting in approximately 1000 cubic metre batches (500 tonnes).

The material will remain on the ASP between 18-21 days depending on conditions and seasonal variation. Composting conditions must be manipulated to maximise the rate of decomposition to achieve stable compost in the shortest possible timeframe. This is done by ensuring the:

– Temperature above 55°C
– C/N ratio between 20/1 and 40/1
– Moisture content above 40% (typically 50 to 60%).

The ASP composting hardstand is arranged with eighteen sets of aeration pipes connected to two fresh air supply fans. Each aeration bay has its own dedicated air supply and wireless probes are placed in the composting material to provide real time monitoring and recording of temperature. Air is blown from the rear technical area via either of the two fans to the connected ductwork and headers to the “spigot” floor system, providing oxygen to the composting materials. The automated process can be visually managed from a process computer which can produce specific batch reports to ensure compliance with relevant quality and environmental standards. Biological composting phases such as warming up, pasteurisation and cooling down are used to establish set points that control the rate and schedule of air delivery to the composting material.

Turning is still required to ensure the entire mass is exposed to the set point temperatures for each composting phase. The control system consists of a process computer that takes care of visualisation. The computer interprets the data and provides a schematic of the complete composting process. The operator can see the status of the batch, then evaluate and adjust process parameters if needed to maintain the temperature, moisture levels and oxygen levels of the composting material at optimum conditions. Where required, temperature probes with dataloggers would be utilised to ensure that the composting material reaches and maintains the required temperatures. Leachate water will be added throughout the process to maintain levels and supress dust. Once the material has reached the pasteurised compost stage it will be removed from the ASP and transported to the maturation area to further breakdown and stabilise.

Figure 4.7 A forced aeration system to be utilised for ASP composting of organic waste materials

Figure 4.8 A forced aeration system to be utilised for ASP composting of organic waste materials

4.5.5 Composting process GO – open windrow

Aerated open windrow composting will be utilised in the southern section of the site to process 100,000tpa of GO. Aerated Windrow Composting is a dynamic system whereby mechanical turning of the material maintains aerobic conditions. Shredded material will be dropped off in the designated receival area or windrow pad. The load will be visually inspected for contamination and if compliant would be blended and formed into windrows by a front-end loader. Each windrow (measuring approximately 140m (l) x 6m (w) x 2.7m (h) would be turned three times

minimum over a period of approximately eight weeks utilising a windrow turner (See Figure 4.9 below). Temperatures would be monitored to ensure that the compost maintains its optimal temperature for pasteurisation. Water will be added to the piles throughout the process to maintain ideal moisture levels and supress dust throughout the composting process.

Figure 4.9 Open windrow turner and piles

Once the pasteurisation phase is complete the material will remain in the windrows to mature the compost. Although the compost temperature is close to ambient during the maturation phase, chemical reactions continue to occur that make the remaining organic matter more stable and suitable for use with plants. Finished compost material will be transferred to the manufacturing pad ready for screening and blending of finished products.

4.5.6 Maturation, product manufacturing and distribution

Compost will be stored in batch-size piles or open windrows on the manufacturing PAD to allow the material to mature. Minor turning and irrigation will take place over this period to aid in the maturation process and reduce dust. Excavators, FEL and windrow turners may be used to turn the material in this area. Compost from the open windrow system will be stored in 1,000 m^3 piles or bunkers ready for screening and blending.

The facility will import up to 150,000 tpa of VENM for use in soil blends. Where possible, VENM would be imported in trucks travelling to the site to collect a load of SOILCO products. The practice of backloading would therefore minimise additional truck movements for the Proposal. VENM would be stored in bunkers or piles on the manufacturing pad ready for blending with mature compost.

Composted material is screened utilising mobile screening equipment to produce a soil conditioner that may be sold directly or blended with soil and sand to manufacture a range of products. Final products will be tested at the frequency and parameters stipulated in the relevant standards prior to sale and beneficial reuse.

To assist with consistency and conformity, a formulation (batching) sheet is utilised for each product and typically contains:

– Product Specification
– Batch Details
– Formulation ID.

Quality Testing occurs prior to the sale of the screened compost. The process control system ensures that best management practices are adopted, and all measures are taken to minimise risks. Composts, soil mixes, soil conditioners and mulches are manufactured to conform to relevant standards.

4.5.7 Water balance

Composting processes require water to be added in order to maintain the correct moisture levels within the piles. It is proposed to utilise dirty water from leachate ponds in the pasteurisation phase whilst clean water will be used during maturation. Bore water is available onsite and is located to the northwest of the facility, approximately 100m from Mitchell Road. The bore will utilise a solar powered pump at a production rate of 1600l/h and is intended to be utilised as top up water for site operations. A stormwater dam will be constructed onsite to catch and store water and to provide a self-sufficient water supply for the demand. Table 4.8 outlines the water demand for the process.

Table 4.8 Estimated water usage[2]

Composting process	TPA	T/week	Water pasteuris. L/t	Leachate water L/week	Duration W	Matr. T	Water matur. L/t	Water L/week	Duration W	Total L/week
Open windrow	100,000	1,923	125	240,385	3	1,442	200	57,692	5	725,577
ASP	150,000	2,885	125	360,577	3	1,673	200	66,923	5	

4.5.8 Surface water and leachate management

The generation of leachate in operational areas will be minimised using drive-over culverts to separate clean and dirty water. There would be three main operational areas at site that require leachate management as per the Queensland ERA 53 Organic material processing guidelines: the passive composting area, aerated composting pad, and the manufacturing, storage, and distribution area. It is proposed to have three ponds on site to store and manage leachate as per the following proposed arrangement:

– Pond 1: It will manage surface water that comes into contact with compost material stored in the manufacturing, storage, and distribution area, where the compost is in going through the maturation phase and final screening process. The catchment area is 42362 m^2 and its surface is gravel. This leachate pond will have a surface area of 5724 m^2 and capacity for 15000 m^3.
– Pond 2: It will manage surface water that comes into contact with FOGO compost material from the passive composting area and ASP. This catchment area is 21911 m^2, and its surface is gravel, except for the ASP area that has a concrete surface. The material receival shed is also in this catchment area, however, it is not expected to contribute to the leachate being stored in the leachate pond 2, as it is an enclosed area with concrete floor. Additionally, the waste being screening there is highly absorptive material with significant water holding capabilities. Leachate pond 2 will have 2733 m^2 and capacity for 5940 m^3.
– Pond 3: It will manage surface water that comes into contact with compost material in the passive open windrow composting area. The leachate pond will have 5040 m^2,and capacity for 12600m^3. The catchment area is 43350 $m^2$and a gravel surface.

Passive open windrow composting area (turned aeration) – Several water supply connections from the leachate dams and the fresh water supply will be positioned around the area for irrigation of the piles. Three ponds are proposed to handle the leachate runoff from site and they will have a total capacity of 13,497m3 (refer to Appendix O). To prevent leachate stored in the ponds from percolating into the groundwater system, the ponds will be lined according to the DESI Best Practice Environmental Management Guideline ERA 53(a) Organic material processing by composting, Version 1.02:

– 600 mm thick recompacted clay with a permeability of less than 10-9 m/s; or
– A high-density polyethylene geomembrane liner with a minimum thickness of 1.5 mm.

The leachate ponds will be able to manage the maximum leachate volumes potentially generated within their respective catchment areas as any rainfall into the ponds during consecutive average rainfall years. No proposed active release of leachate and no overflow up to a design standard rainfall of 900 mm falling within a 6 month period.

The proposed leachate pond system is a gravity feed system with a passive overtopping arrangement once a pond's operational capacity is reached that requires minimal monitoring. The leachate pond system and pipework

[2]Total water usage is estimated to be 15% of organics composted in tonnes. Leachate and/or water can be utilised in the pasteurisation phase.

will be regularly inspected, maintained, and repaired when necessary. As part of the management procedures, leachate recirculation back into compost stockpiles in pasteurisation phase will be done to minimise the use of freshwater and contribute to minimise the stored leachate.

Refer to Figure 4.10 for a visual summary of the leachate and surface water management measures included in the project design.

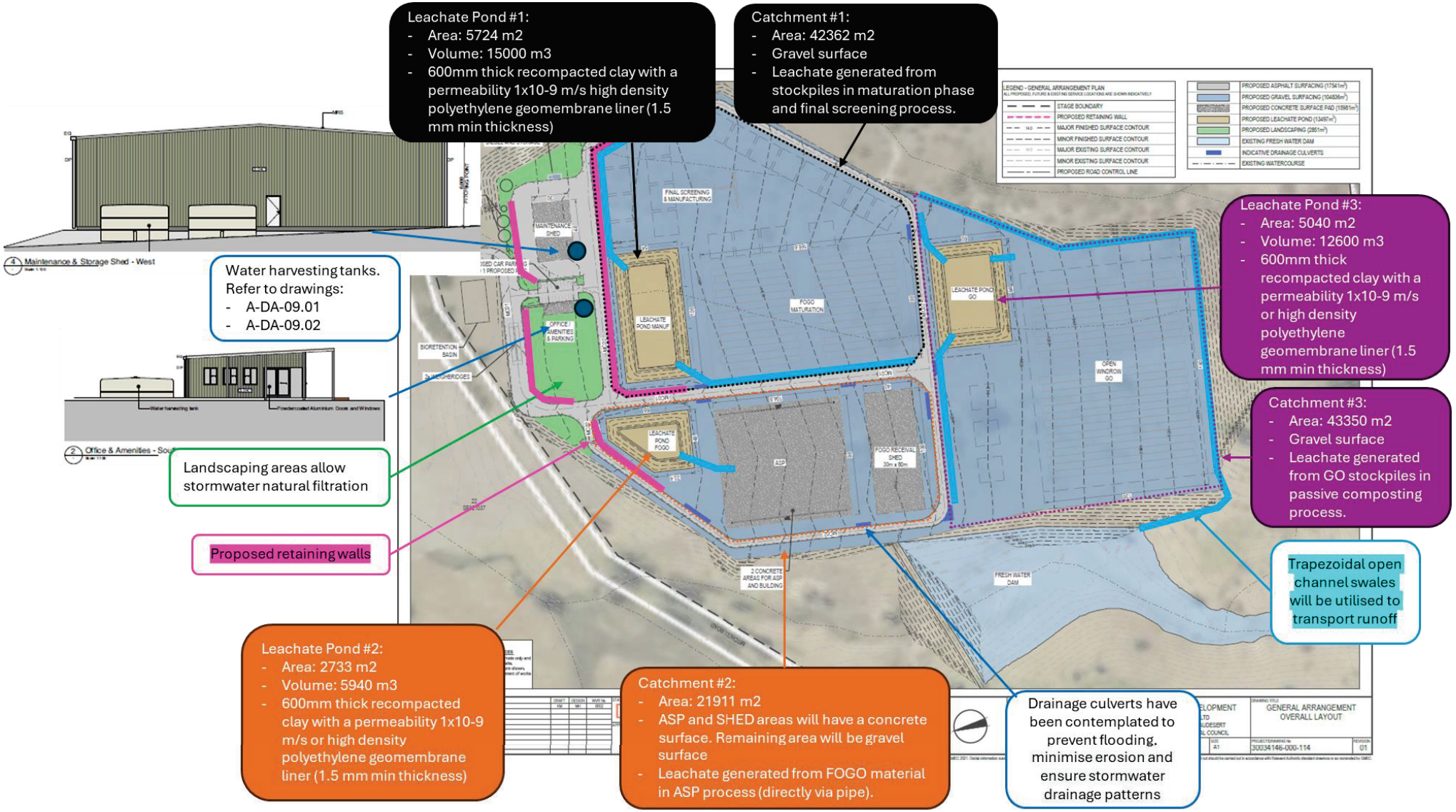


Figure 4.10 Proposed leachate and stormwater management

4.5.9 Residual waste management

All residual waste separated from organics and destined for landfill or recycling (e.g. brick, concrete, plastic, metal etc.), would be stored in appropriately sized bins and transported from the Site as required in distinct truckloads via the weighbridge and from there it would be sent to a suitably licensed facility for further processing or disposal.

4.5.10 Greenhouse gas emissions

The operation of the CMF will create and emit scope 1, 2 and 3 greenhouse gas emissions. Figure 4.11 displays where the emissions are present at each stage of the CMF operation.

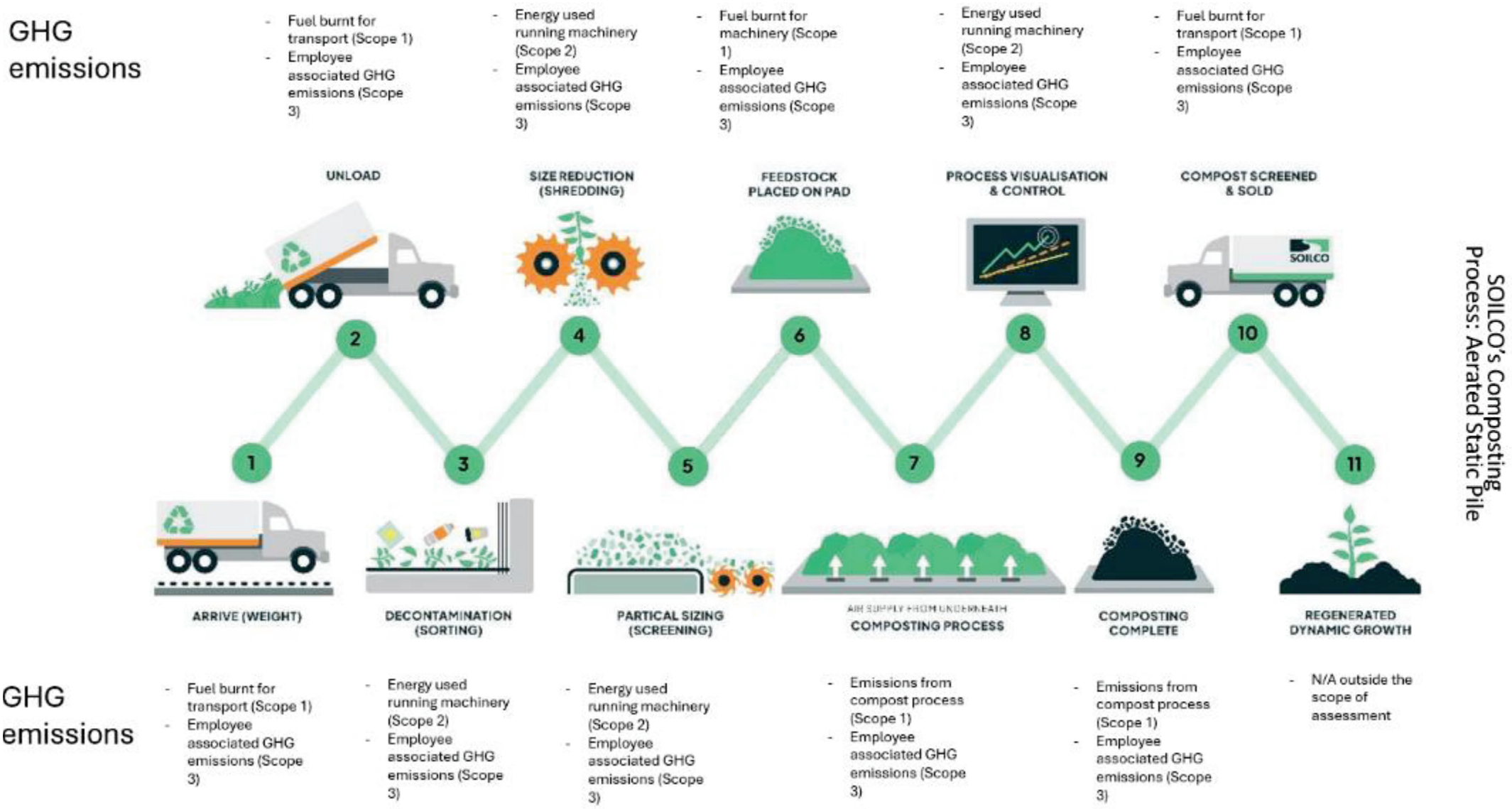


Figure 4.11 Greenhouse gas emissions from each stage of operation

4.5.11 Hours of operation

The proposed hours of operation for the CMF are outlined in Table 4.9.

Table 4.9 Proposed hours of operation

Day	Hours or operation
Monday – Friday	6am to 6pm
Saturday	6am to 4pm
Sunday and public holidays	6am to 4pm

4.5.12 Staff numbers

We anticipate the CMF to be staffed by a maximum 22 persons at any one time. All staff will be local to the area. The breakdown staff numbers are outlined in Table 4.10.

Table 4.10 Proposed staff numbers

Location/operation	Quantity
Office – manager and admin	3
Maintenance	2
Sorting cabin staff	4
Loader operator ASP	2
Loader operator and windrow turner	2
Maturation and manufacturing loading and screening	5
Yard hand	2
Other	2

4.6 Plant and equipment

Table 4.11 sets out the proposed mobile or fixed plant and equipment that would be used on site for the operation of the facility.

Table 4.11 Equipment location and function

Equipment	Description of location and function
Caterpillar 323 Excavator	– Excavation of sand and soil – Assists in turning bulk piles – Turning material on the aerated pad – Feeding the stockpiler.
Volvo L90 (or similar) Front End Loader (FEL)	– Located in the manufacturing, storage, and distribution area – Loading onto ASP or into windrows – Screening and batching of materials – Loading of materials for distribution.
Volvo L150 (or similar) FEL	– Located in manufacturing, storage, and distribution area and in composting yard – Loading onto ASP or into windrows – Batching of materials – Feeding of screening equipment – Loading of materials for distribution.
Dump Truck with 25 tonne capacity	– Locations will vary depending on assigned job – Movement of compost to manufacturing areas

Equipment	Description of location and function
	– Movement of other materials around site where required.
Windrow Turner	– Located in Open Windrow area – Turning and irrigation of compost in open windrow area and in maturation and manufacturing area
Komptech Multistar screen XXL2	– Located in manufacturing area – Screening of composted material into required fractions – Blending of materials for manufacturing
Komptech Nemus (or similar) Trommels	– Located in manufacturing area – Screening of composted material into required fractions – Blending of materials for manufacturing
Decontamination Equipment: – Feeder Hopper – Incline Conveyor – Trommel Screen – Sorting Cabin – Overbelt Magnet – Windsifter – Transfer Conveyors – Shredder – Hook lift Bins	– Located in the FOGO receival and decontamination building – Each item of equipment works in conjunction to decontaminate and FOGO material, prior to composting. Manual sort staff working within an enclosed sot cabin removing contamination. – Hook lift bins will hold any contaminants removed until such time that it can be disposed of at an appropriately licensed facility.
Aeration Fans – Ducting/ piping, Actuators, sensors and controls	– Located in the ASP composting area – Work in conjunction with the aerated pad and aerated floor as part of the composting process.
Fresh water and leachate Pumps	– Located adjacent to dams – Pumping stations piped to supply locations in ASP, OW and manufacturing areas.

4.7 Justification for the locations of the CMF

The Bromelton site was selected by SOILCO as the location for the CMF due to its strategic advantages and suitability across multiple criteria. Located in South-east Queensland, the site is ideally positioned within appropriate distances from existing and proposed facilities in the SOILCO network. Bromelton SDA is the only SDA in South East Queensland and support uses like composting. The layout of the Bromelton site allows for the proposed processing and storage areas to be consolidated on a single pad. The CMF can be positioned away from the main thoroughfare, Beaudesert Boonah Road, with the front of the site available for future development and growth opportunities such as for commercial or industrial spaces.

The subject site is considered to be appropriate for the proposed CMF for the following reasons (Figure 4.12):

– The CMF requires reliable power resources and significant water for its operation. It is located close to Energex infrastructure and there is space to accommodate a freshwater dam.
– The CMF needs to be within close proximity to a State-controlled road and via Mitchell Road can connect to the State controlled road. This provides connection with inter-regional transport corridors to transport organics and soils in and out of the site around SEQ. Beaudesert-Boonah Road is a B-Double approved route and B-Doubles will be used in the operation of the CMF. SOILCO is addressing separate approvals with TMR to upgrade the Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road In addition, Mitchell Road will be upgraded to facilitate the access to the subject site. Scenic Rim Regional Council have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from SRRC for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network.
– The CMF needs to be setback from surrounding sensitive receptors, and with its location onsite and within the SDA precinct, is appropriately setback from sensitive receptors.

- The location of the proposed CMF within the subject site requires the least amount of vegetation clearing and has limited environmental values. Whereas the eastern portion of the subject site has existing trees and shrubs that could support fauna species. In addition, the eastern portion of the subject site could also support Aboriginal cultural heritage values, given that artefacts were found near waterway ACT3.
- The CMF is set back at least 25 m from environmental areas including waterways, however the minimum setback to any operational areas is in excess of 40m throughout the site. The location of the CMF reduces the risk of landslides and the CMF minimizes the potential for ground failure. Constructing on less steep terrain typically requires less extensive site preparation and grading, leading to lower construction costs and timelines. This facilitates easier access for vehicles, ensuring efficient operations during both the construction and ongoing composting processes. Leachate and stormwater measures has been developed for the CMF to manage leachate and runoff, thus protecting nearby water sources.
- The location of the proposed CMF within the subject site is considered to be stable land and have a low risk for by susceptibility to landslide compared to the eastern portion of the subject site which is mapped as steep slope area under the Scenic Rim Regional Council Planning Scheme.
- The Project area is located on an elevated slope on the boundary of uplands to the west and the lower lying and undulating farmland located within Bromelton to the east. The natural topography and vegetation enclose the Project particularly to the west and therefore not impacting on the visual amenity of the surrounding areas.

During the design phase refinements were made to the design footprint in response to the outcomes of the various technical studies that were completed for the Project and the feedback received from regulatory authorities.

SOILCO, a manufacturer of quality assured compost, mulch and soil blends, specialises in the design, construction and operation of innovative organics recycling facilities in Australia.

The Bromelton CMF Project aligns with objectives in the Queensland Government Queensland Organics Strategy 2022–2032 by reducing the amount of organic waste sent to landfills and helping in the transition to a circular economy. This approach keeps resources circulating at their highest value and regenerates natural systems. The Bromelton CMF Project not only supports the goal of transforming Queensland into a zero-waste society but also fosters economic and social benefits through job creation and local business opportunities in South East Queensland. By diverting organic waste away from landfills to composting, the Project helps minimise leachate and greenhouse gas emissions. SOILCO, who successfully operates a state-of-the-art network of licensed organics processing facilities across Eastern Australia and has a strong distribution network in agricultural and urban markets in Australia, is well-positioned to contribute to Queensland's circular economy goals through this project.

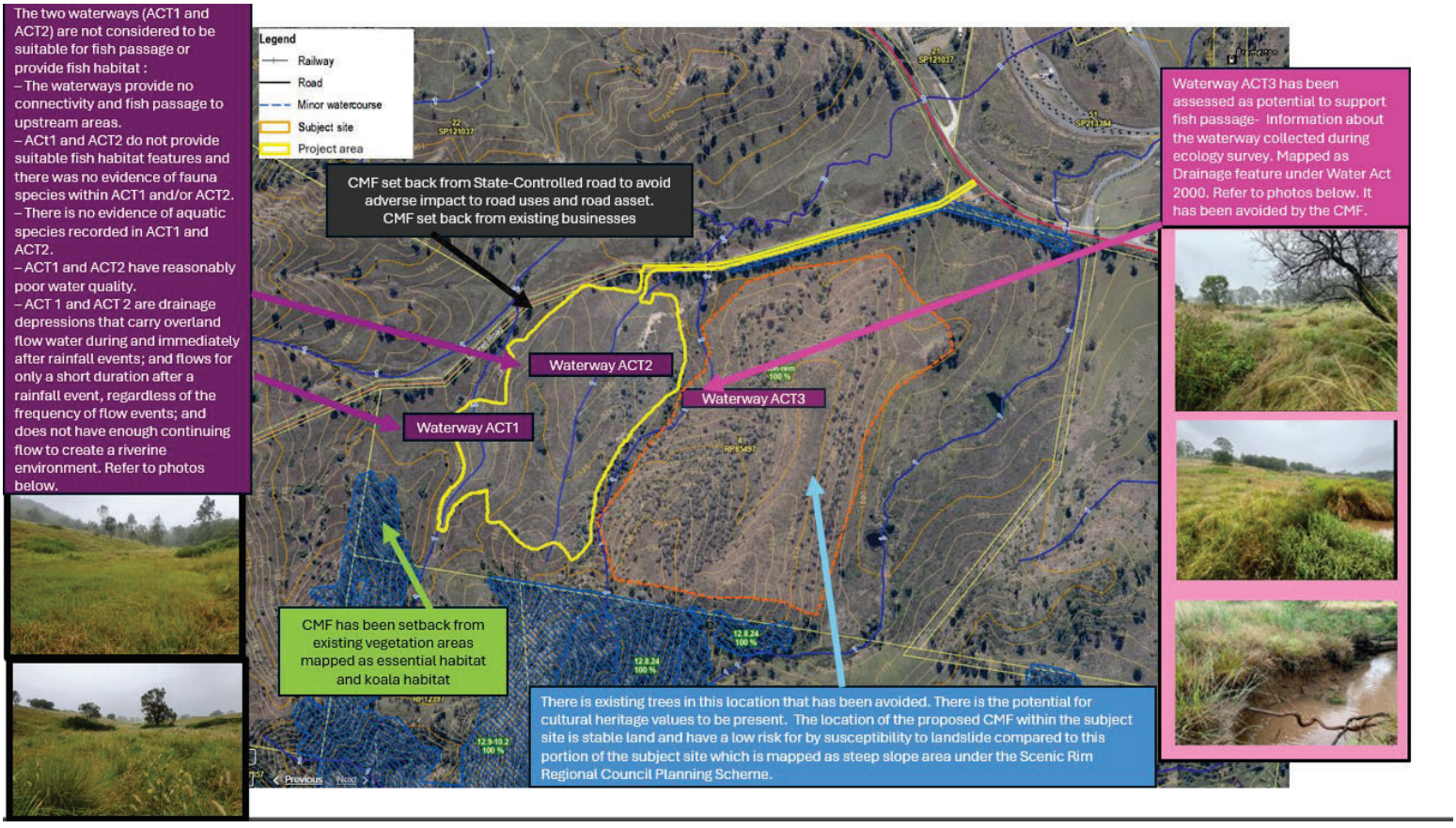


Figure 4.12 *Constraints mapping for the Bromelton CMF*

5. Impacts and mitigation measures

5.1 Risk ratings

Potential construction and operational impacts have been identified for the Project and a risk rating has been applied to each potential impact using the GHD risk matrix. Mitigation measures for each potential impact are described with a residual risk rating then applied.

The risk rating applied to each potential impact and residual impact has been identified using the GHD risk matrix (Table 5.1). The GHD risk matrix applies consequence and likelihood ratings to the identified environmental impacts to give a risk rating for each impact. The most likely and probable descriptor is used based on the information available, rather than the worst possible outcome. Consequence is assessed first, so the likelihood is based on the selected consequences descriptor. Consequence descriptors are defined in Table 5.2 while likelihood is described in Table 5.3. Construction and operational impacts are described in Sections 1.1 and 5.3, respectively.

Table 5.1 Risk Matrix

		Consequence				
		Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Likelihood	Very unlikely	Negligible	Negligible	Low	Moderate	Moderate
	Unlikely	Negligible	Negligible	Low	Moderate	Significant
	Possible	Negligible	Low	Moderate	Significant	Extreme
	Likely	Low	Low	Moderate	Significant	Extreme
	Almost certain	Low	Moderate	Significant	Extreme	Extreme

Table 5.2 Consequence description

Descriptor	Definition
Insignificant	Negligible on-site / off-site environmental impact and of low significance
Minor	On-site/off-site environmental localised impact, immediately contained
Moderate	On-site/off-site environmental short term impact, immediately recoverable
Major	On-site/off-site environmental medium term impact or repeated non-compliance with potential in some jurisdictions for prosecution
Catastrophic	Significant on-site/off-site environmental long term harm that is not recoverable significant fines and prosecution at company and individual level may apply in some jurisdictions

Table 5.3 Likelihood descriptors

Descriptor	Definition
Very unlikely	Highly doubtful but could occur in exceptional circumstances
Unlikely	It is improbable that it may occur
Possible	It is conceivable that it may occur
Likely	Will probably occur in most circumstances
Almost certain	Expected to occur in most circumstances

5.2 Construction impacts and mitigation

The construction environmental impacts, mitigation measures and residual impacts for land, air, noise and vibration and water are outlined in Table 5.5, A noise impact assessment has been completed for the construction phases of the project (refer to Appendix O) to identify and determine any potential impacts on the nearby sensitive receptors. The report concludes the project complies with the relevant legislation and recommends implementing a few mitigation actions and best practices to minimise negative impacts. Table 5.6 outlines the potential impact and mitigation for noise and vibration for the construction phase.

Table 5.6 and Table 5.7.

SOILCO has considered both direct and indirect impacts to the surrounding environment during the construction phase. A number of technical reports have been developed for the CMF Project and have determined potential impacts the CMF may have on the surrounding environment during the construction phase.

The risk assessment tables presented in this section outline proposed mitigation measures to be adopted to mitigate the potential impacts. The risks and mitigation measures have primarily been sourced from the technical studies undertaken for the CMF Project.

The construction mitigation measures outlined in this section will be incorporated into the contract documentation to make sure construction activities are managed in a way to minimise impacts to the environment. Specific environmental management measures will be incorporated into the EMP© including water quality, erosion and sediment control, vegetation clearing, weed control, noise management and management of fauna and cultural heritage.

5.2.1 Land

Natural Hazards

A Bushfire Hazard Assessment and Management Plan has been completed for the proposed compost manufacturing facility. The bushfire risk is expected to be low to moderate. There are several mitigation measures to manage bushfire risk such as asset protection zones, fencing, water supply, fire-fighting infrastructure, revegetation, and fuel load management. Refer to Appendix Q. A list of potential impacts associated with bushfire risk from the construction phase is outlined in Table 5.4.

A landslide stability assessment has been completed for the proposed development. The assessment was based on a review of available published geological information and a walk-over survey by a geotechnical engineer. The site walkover observations indicated site drainage to be generally poor to fair. Erosion was noted around the creek located north of the site. The maximum slope fall is approximately 25 - 30%. Aside from the previously noted creek bed, there were no signs of water ponding and instability noted at the site. The Project area also has a low landslide susceptibility rating. Refer to Appendix S. A list of potential impacts associated with landslide from the construction phase is outlined in Table 5.4.

Visual Amenity

A Visual Impact Assessment was completed for the Project and is included in Appendix M. A Visual Impact Assessment was also undertaken with seven representative viewpoints selected for assessment. The outcome of this process indicates that the visual impacts of the Project are anticipated to be high-moderate to negligible. Overall, the Project area is well-screened by intervening landform and vegetation, however, the construction of Mitchell Road would be visible from Beaudesert Boonah Road and surroundings especially the views to the north and west of the Project. A list of potential impacts to visual amenity from the construction phase is outlined in Table 5.4.

Cultural heritage

A cultural heritage assessment was completed for Project to assess the potential risk the project poses to cultural heritage values prior to works commencing for the Compost Manufacturing Facility. The desktop assessment revealed that there were two (2) known cultural heritage values within 1km of the project area. The field investigations found numerous stone artefacts within the works area on areas where the ground surface was able to be seen. As there are ridgelines, watercourses and some mature vegetation within the project area, the likelihood of further cultural heritage values is significantly high. The entirely of the site is mapped as a Category 5 risk under the ACH Act Duty of Care Guidelines. The likelihood of other values being uncovered during construction are significantly high. Refer to Appendix R

Biodiversity

A terrestrial and aquatic ecology assessment has been completed for the proposed compost manufacturing facility (refer to Appendix G). Construction of the Project involves the following activities:

– Vegetation clearing
– General civil construction activities, including earthworks
– Operation of vehicles and machinery
– Transportation and haulage
– Storage of potentially hazardous substances such as fuel, chemicals and wastes

During the construction phase the Project is expected to result in localised losses of habitat, predominantly due to clearing for access tracks, the project layout, and temporary disturbance of wildlife through construction light, noise, vibration and increased vehicle movements, as well as the potential for erosion and sedimentation. Loss of aquatic habitat due to construction activities. Refer to Table 5.4 for more information.

The project footprint within Lot 4 RP85497 for the CMF will require the clearing of 21 ha of Category X vegetation.

The project footprint within Mitchell Road will require the clearing of:

– 0.5 ha of Category B Endangered and Of Concern regional ecosystems.
– 0.2 ha of Category X (non-remnant) vegetation.

Essential habitat areas mapped over the Category B sections of Mitchell Road reserve and will be impacted by vegetation clearing activities. The short-beaked echidna (Tachyglossus aculeatus) has the potential to occur in subject site and a significant impact assessment determined that the Project is unlikely to have a significant residual impact on this species. White-throated needletail, Grey-headed flying fox, Yellow bellied glider and Greater glider have the potential to occur in subject site and a significant impact assessment determined that the Project is unlikely to have a significant residual impact on this species. The clearing within the essential habitat area is not expected to exceed the clearing limits as outlined in the Significant Residual Impact Guideline.

Core koala habitat mapped within Mitchell Road and will be cleared as part of the road upgrade.

Table 5.4 Construction impacts and mitigations for land

Impact	Initial risk rating	Mitigation	Residual risk rating
Bushfire			
Bushfire impacts to construction. Including damage to equipment, buildings and staff.	Low	– Construction will not include any Class 1, 2, 3 or selected 9 and 10 buildings. Therefore, further assessment of building provisions has not been carried out. – Recommended that materials used on site are largely non-flammable/fire resistant in nature e.g. concrete or steel to minimise the risk of fire spreading onsite and beyond the facility. – Use of timber for construction shall be minimised where possible. – Any fences or barriers must not be constructed from timber. – Retaining walls should be constructed of fire resistant or fire-retardant material e.g. concrete, stone, masonry. – Adequate standard to accommodate emergency access to and from site, via the upgrade of Mitchell Road.	Low
Landslip occurs where the CMF is proposed and resulting uncontrolled release of leachate/contaminants entering the surrounding environment.	Moderate	– A landslide assessment risk assessment has been completed for the CMF (refer to Appendix S). It determined through the Landslide Susceptibility Analysis that provided that earthworks meet the relevant Australian Standards and retraining walls are checked by a geotechnical engineer then the likelihood of a failure of the existing site is a safety factor of not less than 1.5 for global instability, is unlikely and the consequence Minor, and the assessed risk is Low and acceptable. The creek banks	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		and areas of cut to fill will also need to be checked by a geotechnical engineer at time of construction to verify stability.	
Visual amenity			
Risk of impact to the design materiality due to the construction works.	Moderate	– Ensure the Project form, material and finishes are of high quality and are in keeping with the surrounding setting to positively contribute to existing rural landscape character values – Avoid or minimise the use of shiny or reflective materials to reduce associated visual impacts on surrounding sensitive receptors – Consider specifying neutral colours for the cladding of external walls and roof that complements the rural landscape setting. – If required, specify boundary fencing that is sensitive to the rural aesthetic of the site and avoid large areas of opaque, metal fencing.	Low
Visual modifications due to landscaping	Significant	– Additional screen planting using shrubs and trees along Mitchell Road will assist to preserve the landscape character of surrounding farmlands whilst minimising views from Beaudesert Boonah Road. – Increasing the density of planting along the site boundaries will minimise visual impacts of the additional infrastructure and taller buildings within the CMF. – Plant screening vegetation within the site boundary to minimise visual impacts experienced from Beaudesert Boonah Road, Sandy Creek Road and the railway corridor. – Avoid vegetation clearing, especially mature and regulated trees, where possible, to retain existing character values. – Consider planting vegetation throughout the Project area to break up the concrete expanses and hard stand areas and to aid successful blending of the Project into the surrounding rural landscape.	Moderate
Visual modifications due to signage	Low	– Where possible, minimise visual impacts of signage by: • Minimising signage dimensions • Avoiding brightly illuminated signage • Employing high-quality signage design • Locating signage on buildings rather than freestanding.	Negligible
Visual modifications due to construction works	Low	– Take all practical measures to ensure construction equipment, storage areas, and other visible elements are located away from key views to or from the sensitive visual receptors identified in this assessment – Ensure general tidiness of the site is maintained during construction – Avoid conducting work in evenings and nights where possible, to minimise impacts from lighting	Negligible

Impact	Initial risk rating	Mitigation	Residual risk rating
		– Where construction activity cannot be located away from trees, provide tree protection to ensure they are not damaged. – All areas disturbed by construction and ancillary works are to be rehabilitated to their previous condition. – During construction, employ screening measures to assist the site in blending into the surrounding area. Choice of screening is to be sympathetic to the existing rural setting.	
Erosion and sediment control			
Disturbance of *in situ* soils has the potential to result in erosion and sedimentation. Potential activities that could result in erosion and sedimentation include earthworks and excavations which could pose a risk to flora and fauna and impact on waterways.		– Routine inspection / observation of cleared land to determine flow paths of stormwater and install appropriate controls. – Install bunds and stormwater controls to divert flow to appropriate areas and discharge points. – Routine inspection / observation and cleaning of drains and stormwater control infrastructure. – Temporary stormwater ponds should be desilted and maintained to ensure operation allows for the maximum storage volume and minimal unlicensed discharges. – Stormwater quality should be inspected and tested to confirm if it meets levels appropriate for discharge. Only stormwater that meets specified license or site water quality criteria (i.e. State and local government) should be discharged from the site. – Sediment collected in stormwater infrastructure will be appropriately disposed of in a manner that will not create an erosion or pollutant hazard, or allow it to re-enter a waterway.	
Terrestrial Biodiversity			
Disturbance or clearing of vegetation and fauna habitats, which is likely to reduce the number of native fauna in the area.	Significant	**Design** – Vegetation clearing limits around sensitive habitat (core habitat to the koala) to be defined within the contract documentation for Mitchell Road. – Nominate no-go zones on the design drawings and within contract documentation to protect significant vegetation within Mitchell Road. Including areas mapped as core koala habitat. – Require the Contractor to develop a clear staged approach to vegetation clearing to minimise the amount of clearing undertaken at one time and include an initial stage for vegetation clearing to support pioneering works such as for fence installation and establishment of erosion and sediment devices. – Design drawings to delineate the extent of the Project area and any specific nominated no-go zones where vegetation is to be retained within the Project area. – Minimise the extent of clearing required for the Project, where possible.	Moderate
Injury and mortality of wildlife due to wildlife moving through the project area during construction and operation.	Significant		Moderate
Vegetation clearing for the project will reduce connectivity within and adjacent to the Project area.	Moderate		Low
Disturbance of wildlife by increased light, noise and vibration, resulting in injuries or mortalities of wildlife.	Significant		Low
Habitat degradation through dust, run-off and sedimentation through construction	Moderate		Low

Impact	Initial risk rating	Mitigation	Residual risk rating
activities that can reduce the abundance and diversity of habitats by: – physically smothering vegetation – changing nutrient levels – decreasing water quality – encouraging weed incursions – altering movement of wildlife.		– Pre-clearance surveys to mark the locations of all potential breeding places for wildlife, disturbance of which is to be avoided as possible. These will target areas with potential to support breeding habitat for conservation significant species and breeding places identified within this report. – Design adverse incident response procedures to detail actions to be taken in the event of wildlife injury or mortality during clearing. – Develop a construction ESCP in accordance with the Best Practice Erosion and Sediment Control manual (IECA, 2008).	
Construction activities have the potential to introduce new invasive species trough the increase movement of people and machinery in the Project area.	Significant	– Prepare a low-risk Species Management Program in accordance with the requirements of Section 335 of the Nature Conservation (Animals) Regulation 2020. This will outline a process to identify and minimise impact on breeding places for least concern species listed under the NC Act. – The landscape plan should incorporate the use of endemic native species wherever possible. – Incorporate design measures that prevent or reduce the attraction of introduced fauna such as foxes, rats, cats and dogs to the Project area, such as ensuring waste areas are enclosed and secure. **Construction** – Prepare and adhere to an EMP(C). The EMP(C) should include protocols to limit injury and mortality to fauna including management of risks associated with open excavations and increased traffic, and responses and reporting for roadkill and adverse incident protocols. – Restrict vegetation clearing to the minimal area required to enable safe construction, operation and maintenance of the Project. – Ensure that vegetation clearing boundaries are established with appropriate signage at regular intervals using visible and physical markings. High visibility tape, barricade webbing or similar should be utilised. Ensure that all contractors are aware of these boundaries. – Engage suitably qualified and experienced fauna spotter/catchers to undertake pre-clearance surveys immediately prior to clearing and supervise all clearing activities associated with construction. This will involve searching and clearing tree hollows, habitat trees and fallen logs prior to clearing and relocating resident fauna to the nearest suitable, safe habitat outside the clearing footprint. – If a koala is encountered within the Project area, the individual must not be relocated and should be left to self-disperse on their own accord (wherever possible). – Fauna within the Project area will be encouraged to self-disperse when the works take place. Disturbances associated with construction of the facility (i,e. increased noise and human presence) are anticipated to encourage species occurring within the Project area to self-disperse.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		– If injuries occur, the fauna spotter/catcher will capture and transport the injured animal to a qualified veterinarian for treatment or euthanasia (unless suitably qualified to undertake treatment/euthanasia themself). Prior to clearing for construction, formalise arrangements with local veterinary services to treat and care for injured animals. – Rehabilitate and revegetate temporary construction areas as soon as possible after the completion of construction. – Include weed management measures in the Contractor's EMP (C) to prevent the spread or introduction invasive plants and environmental weeds. – Reduce sources of artificial light by reducing night works and limiting site lighting to the minimum needed for safety. – Prioritise construction activities to daylight hours to reduce the need for lighting and resultant light spill into adjacent habitat and to reduce noise and vibration impacts on nocturnal fauna species. – Install erosion and sediment control measures where disturbance must be undertaken within or adjacent to wetted waterways. – Implement responsible waste management practices (e.g. not leaving out food waste and not feeding wildlife) during construction. All waste will be stored in secure temporary holding containers and transported off site. – Clearly demarcate areas of native vegetation to be removed so that equipment operators and supervisors are aware of clearing extents.	
Construction impacts to MSES	Moderate	**Construction** – Prepare and adhere to an EMP(C). The EMP(C) should include protocols to limit injury and mortality to fauna including management of risks associated with open excavations and increased traffic, and responses and reporting for roadkill and adverse incident protocols. – Restrict vegetation clearing to the minimal area required to enable safe construction, operation and maintenance of the Project. – Ensure that vegetation clearing boundaries are established with appropriate signage at regular intervals using visible and physical markings. High visibility tape, barricade webbing or similar should be utilised. Ensure that all contractors are aware of these boundaries. – Engage suitably qualified and experienced fauna spotter/catchers to undertake pre-clearance surveys immediately prior to clearing and supervise all clearing activities associated with construction. This will involve searching and clearing tree hollows, habitat trees and fallen logs prior to clearing and relocating resident fauna to the nearest suitable, safe habitat outside the clearing footprint. – Pre-clearance surveys to mark the locations of all potential breeding places for wildlife (i.e. hollows, nests, burrows etc), disturbance of which is to be avoided as possible. These will target areas with potential to support breeding habitat for conservation significant species and breeding places identified within this report.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		– Prepare a Species Management Program (SMP) in accordance with the requirements of Section 335 of the Nature Conservation (Animals) Regulation 2020. This will outline a process to identify and minimise impact on breeding places for least concern species listed under the NC Act. – If a koala is encountered within the Project area, the individual must not be relocated and should be left to self-disperse on their own accord (wherever possible). – Fauna within the Project footprint will be encouraged to self-disperse when the works take place. Disturbances associated with construction of the facility (i,e. increased noise and human presence) are anticipated to encourage species occurring within the Project footprint to self-disperse. – If injuries occur, the fauna spotter/catcher will capture and transport the injured animal to a qualified veterinarian for treatment or euthanasia (unless suitably qualified to undertake treatment/euthanasia themself). Prior to clearing for construction, formalise arrangements with local veterinary services to treat and care for injured animals. – Inspect trenches, excavations and machinery daily for the presence of trapped fauna. – Develop adverse incident response procedures to detail actions to be taken in the event of wildlife injury or mortality during clearing. This will include procedures for capture and transport of injured wildlife to qualified veterinarian or humane on-site euthanasia and formalisation of arrangements with a local veterinarian to treat and care for wildlife injured during for the construction period. – Rehabilitate and revegetate temporary construction areas as soon as possible after the completion of construction. – Include weed management measures in the Contractor's EMP (C) to prevent the spread or introduction invasive plants and environmental weeds. – Reduce sources of artificial light by reducing night works and limiting site lighting to the minimum needed for safety. – Prioritise construction activities to daylight hours to reduce the need for lighting and resultant light spill into adjacent habitat and to reduce noise and vibration impacts on nocturnal fauna species. – Where nightworks are required, minimise lighting impacts into retained adjacent vegetation and wetland areas by reducing light spill outside of the subject site. – All waterway crossing structures are to consider the suite of fish present in the waterway and the fish species' passage requirements. Thirty-four native freshwater fish have been recorded in the catchment, which may migrate upstream when flows occur. Fish most likely to migrate into the Project footprint are small-bodied fish that are adapted to the ephemeral conditions of the local waterways, such as gudgeons, rainbowfish, etc. – Where de-watering of waterways and/or modified dams is required, develop a Dewatering Management Plan to identify appropriate management strategies for	

Impact	Initial risk rating	Mitigation	Residual risk rating
		aquatic fauna to minimise injury and death during construction, which include (as a minimum) the following: • Aquatic fauna salvage prior to and during de-watering by a suitably qualified aquatic ecologist • Translocating species to nearby waterways or wetlands of similar quality • Temporary storage and monitoring to demonstrate the water meets the reuse or discharge water quality objectives • On-site re-use of suitable water (e.g. for dust suppression) where practicable – Contingency for on-site treatment and discharge for water that does not meet the objectives or approvals conditions – Install erosion and sediment control measures where disturbance must be undertaken within or adjacent to wetted waterways. – Implement responsible waste management practices (e.g. not leaving out food waste and not feeding wildlife) during construction. All waste will be stored in secure temporary holding containers and transported off site. – Clearly demarcate areas of native vegetation to be removed so that equipment operators and supervisors are aware of clearing extents. – Utilise existing cleared areas for laydown of materials. – Design storage facilities and laydown areas a minimum of 50 m from any waterway, where possible. If areas cannot be located 50 m away, then bunds would need to be erected around the perimeter of the laydown area and checked daily for failures. Any failures in the bund wall will need to be rectified prior to any additional material being stored. **Design** – Vegetation clearing will be restricted to the minimum amount necessary for the construction within the Project footprint, including in riparian zones. – The extent of vegetation clearing (and no-go areas) will be clearly identified on construction plans and in the field using high visibility fencing. Clearing extent will be communicated to construction supervisors. – Require the Contractor to develop a clear staged approach to vegetation clearing to minimise the amount of clearing undertaken at one time and include an initial stage for vegetation clearing to support pioneering works such as for fence installation and establishment of erosion and sediment devices. – Design drawings to delineate the extent of the Project area and any specific nominated no-go zones where vegetation is to be retained within the Project area. – Design adverse incident response procedures to detail actions to be taken in the event of wildlife injury or mortality during clearing. – Where reasonable and practicable, incorporate water sensitive urban design measures to minimise runoff that enters waterways. This should take into consideration the water	

Impact	Initial risk rating	Mitigation	Residual risk rating
		quality objectives, level of risk, maintenance requirements and physical space within the site to accommodate treatment devices. It should also include consideration of any locations where additional scour protection may be required to minimise erosion risk and maintain watercourse stability. Measures may include wide grassed swales, rock dissipaters, gross pollutant traps, and sediment basins. Within waterways and riparian areas, erosion and sediment control measures should prioritise soft engineering measures to achieve stabilisation where possible (i.e. geofab, jute matting or planting). – Where possible, design culverts in accordance with the 'Accepted development requirements for operational work that is constructing or raising waterway barrier works' (DAF, 2018). Refer to the Mitchell Road drawings in Appendix A. – Develop a construction Erosion and Sediment Control Plan (ESCP) in accordance with the Best Practice Erosion and Sediment Control manual (IECA, 2008). – If a landscape plan is to be developed, it is recommended that this incorporates the use of endemic native species wherever possible. – Incorporate design measures that prevent or reduce the attraction of introduced fauna such as European foxes, black rat, feral cats and wild dogs to the Project area, such as ensuring waste areas are enclosed and secure. – Limit permanent exclusion fencing at site. – All fencing used on the Project will use fencing without barbed wire, particularly on the top strand, to minimise incidence of flying-fox entanglement.	
Aquatic Biodiversity			
Loss of aquatic habitat due to construction activities.	Low	– Minimise the extent of all vegetation clearing wherever possible, particularly within riparian zones of waterways. – Where reasonable and practicable, incorporate water sensitive urban design measures to minimise runoff that enters waterways. This should take into consideration the water quality objectives, level of risk, maintenance requirements and physical space within the site to accommodate treatment devices. It should also include consideration of any locations where additional scour protection may be required to minimise erosion risk and maintain watercourse stability. Measures may include wide grassed swales, rock dissipaters, gross pollutant traps, and sediment basins. Within waterways and riparian areas, erosion and sediment control measures should prioritise soft engineering measures to achieve stabilisation where possible (i.e. geofab, jute matting or planting). – Minimise lighting impacts into retained adjacent vegetation and wetland areas by reducing light spill outside of the subject site. – All waterway crossing structures are to consider the suite of fish present in the waterway and the fish species' passage requirements. Thirty-four native freshwater fish have been recorded in the catchment (refer to Section 4.8), which may migrate upstream when flows occur. Fish most likely to migrate into the Project area are small-	Negligible
Degradation of aquatic habitat and water from excessive sediment and release of contaminant, increase of weed and pest species and overall reduction in suitability of habitat conditions.	Moderate		Low
Disturbance of aquatic fauna by increase light, noise and vibration from construction machinery and vehicles and operation of the facility.	Significant		Low
Alteration of flow and aquatic fauna movement as a result of construction activities.	Moderate		Low
Fauna injury and mortality due to construction works within waterways	Moderate		Low

Impact	Initial risk rating	Mitigation	Residual risk rating
including excavation and dewatering of modified dams.		bodied fish that are adapted to the ephemeral conditions of the local waterways, such as gudgeons, rainbowfish, etc. – Where possible, design culverts in accordance with the 'Accepted development requirements for operational work that is constructing or raising waterway barrier works' (DAF, 2018). – Develop an Erosion and Sediment Control Plan (ESCP) in accordance with the Best Practice Erosion and Sediment Control guidelines (International Erosion Control Association, 2008) to minimise impacts to water quality and aquatic habitat. – Where de-watering of waterways and/or modified dams is required, develop a Dewatering Management Plan to identify appropriate management strategies for aquatic fauna to minimise injury and death during construction, which include (as a minimum) the following: • Aquatic fauna salvage prior to and during de-watering by a suitably qualified aquatic ecologist. • Translocating species to nearby waterways or wetlands of similar quality. • Temporary storage and monitoring to demonstrate the water meets the reuse or discharge water quality objectives. • On-site re-use of suitable water (e.g. for dust suppression) where practicable. • Contingency for on-site treatment and discharge for water that does not meet the objectives or approvals conditions. The following measures included in the EMP: • An explanation of the general biosecurity obligation under the *Biosecurity Act 2014.* • Procedures for vehicle wash-downs and inspections. • A requirement for 'weed free' certification and checks prior to vehicles entering the construction site during site establishment. • Procedures for reporting sightings of prohibited and restricted pest species within the works area. • A requirement for the appropriate treatment of all restricted invasive plants in the construction area before construction begins. • A requirement that weed infested vegetation is not mulched for re-use on-site, and off-site disposal for weed infested mulch at an appropriate facility. • The identification of no-go zones and protection areas in the construction area. • Prohibiting the movement of restricted invasive plants, including aquatic plants, such as *Salvinia molesta* (salvinia), into areas which do not contain the restricted invasive plants. – Design storage facilities and laydown areas a minimum of 50 m from any waterway, where possible. If areas cannot be located 50 m away, then bunds would need to be erected around the perimeter of the laydown area and checked daily for failures. Any	
Introduction and spread of invasive species due to increased movement of vehicles and machinery.	Moderate		Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		failures in the bund wall will need to be rectified prior to any additional material being stored.	
Heritage			
The entirely of the site is mapped as a Category 5 risk under the ACH Act *Duty of Care Guidelines.* The likelihood of other values being uncovered during construction are significantly high.	Significant	– Traditional Owner consultation will be required to avoid harm to Indigenous cultural heritage under the *Aboriginal Cultural Heritage Act 2003.* Consultation may result in: • A cultural heritage management plan, or; • A cultural heritage management agreement, or; • A cultural heritage field agreement – Site protocols are to be followed at all times during construction and operation. **Site inductions** • Provide machinery and road/traffic personnel with relevant cultural heritage training to ensure they: a. Understand the Duty of Care requirements under the Aboriginal Cultural Heritage Act 2003. b. Understand where machinery, stockpiles etc. should be located. • The site induction can be delivered by the responsible cultural heritage officer (Tim Menkins 0497 259 960). – During Works (these guidelines are developed from the Department of Environment and Science Procedural Guide for Managing Indigenous Cultural Heritage. For further information see Department of Environment and Science 2015): • FIND: An item of potential Cultural Heritage is found. • STOP: All work at the FIND location shall cease. The item shall not be removed or disturbed and an exclusion zone must be installed around the area. • NOTIFY: The Contractor shall immediately notify a 'responsible person'. • MANAGE: This may include precluding access to that area and liaison with relevant Aboriginal party/parties. The Contractor shall notify all site personnel of the object and/or area and proposed treatment of the object and/or area as soon as possible, but prior to commencing work on the next working day. Please immediately notify the responsible cultural heritage officer should further historical or Indigenous heritage values be identified (Tim Menkins 0448 119 104). **Archaeological Discoveries** • Under section 89 of the Queensland Heritage Act 1992 (QHA), if values are, or could be, of State significance, a notification of discovery must be made to the Department of Environment, Science and Innovation (DESI) • Under section 90 of the QHA, unless the chief executive gives consent, or if a person has a reasonable excuse, the archaeological artefact must not be interfered with until at least 20 business days after the giving of notice. When an	Moderate

Impact	Initial risk rating	Mitigation	Residual risk rating
		archaeological discovery is reported, DES assesses the finds to determine if it is an important source of information about Queensland's history. Discoveries may be assessed as: • Not important. • Important and requiring management strategies. • Important and eligible for entry in the Queensland Heritage Register. – Archaeological discoveries can occur regardless of land tenure.	
Construction works to uncover non-Indigenous heritage values.	Low	– Site protocols are to be followed at all times during construction and operation. **Site inductions** • Provide machinery and road/traffic personnel with relevant cultural heritage training to ensure they: • Understand the Duty of Care requirements under the Aboriginal Cultural Heritage Act 2003. • Understand where machinery, stockpiles etc. should be located. • The site induction can be delivered by the responsible cultural heritage officer (Tim Menkins 0497 259 960). – During Works (these guidelines are developed from the Department of Environment and Science Procedural Guide for Managing Indigenous Cultural Heritage. For further information see Department of Environment and Science 2015): • FIND: An item of potential Cultural Heritage is found. • STOP: All work at the FIND location shall cease. The item shall not be removed or disturbed and an exclusion zone must be installed around the area. • NOTIFY: The Contractor shall immediately notify a 'responsible person'. • MANAGE: This may include precluding access to that area and liaison with relevant Aboriginal party/parties. The Contractor shall notify all site personnel of the object and/or area and proposed treatment of the object and/or area as soon as possible, but prior to commencing work on the next working day. Please immediately notify the responsible cultural heritage officer should further historical or Indigenous heritage values be identified (Tim Menkins 0448 119 104). **Archaeological Discoveries** • Under section 89 of the Queensland Heritage Act 1992 (QHA), if values are, or could be, of State significance, a notification of discovery must be made to the Department of Environment, Science and Innovation (DESI) • Under section 90 of the QHA, unless the chief executive gives consent, or if a person has a reasonable excuse, the archaeological artefact must not be interfered with until at least 20 business days after the giving of notice. When an archaeological discovery is reported, DES assesses the finds to determine if it is an	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		important source of information about Queensland's history. Discoveries may be assessed as: • Not important. • Important and requiring management strategies. • Important and eligible for entry in the Queensland Heritage Register. – Archaeological discoveries can occur regardless of land tenure.	
Native title claim over the project area that may impact project works.	Low	– If it can be proven that freehold tenure was validly declared prior to 13 December 1996, then Native Title is extinguished in this area. If Native tile has been validly extinguished for this reason, then it need not be considered further for this project.	Low
Waste			
Material and resource selection and consumption during construction	Low	– Educated planning shall be implemented to efficiently manage the delivery and storage of materials, reducing spoilage of materials. – Agreements with suppliers to where possible use reusable or recyclable packaging in preference of single use packaging. – Minimise procurement of material to reduce spoilage.	Negligible
General waste management activities	Moderate	– The Waste Management Hierarchy of "avoidance, reuse, recycling, disposal" will be followed to manage waste throughout site operations. – The Contractor will identify and maximise opportunities for supporting a circular economy that benefits waste avoidance and recycling of key priority waste streams. – A site induction shall be implemented for all site personnel detailing their responsibilities under the relevant waste management legislation and guidelines in regard to the minimisation, classification, management and reporting of waste on-site. – Signs within the site will be erected to encourage employees to reduce, reuse or recycle where possible. – Footpaths and road reserves on the site are to be maintained clear of rubbish, building materials and all other waste materials.	Low
Waste/reuse materials handling	Low	– If encountered or identified, hazardous waste shall be managed by appropriately qualified and licensed contractors in accordance with state legislation. – Waste receptacles, both general and recycling, shall be made available throughout the site to allow for waste segregation and replaced or emptied regularly to prevent overflow. – Liquid wastes are to be stored in appropriate containers in areas that are bunded. – Recyclables and non-recyclable wastes are to be stored in appropriate containers on-site until removed to an approved disposal or recycling facility. – All waste receptacles shall be covered and bunded where possible.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
Waste disposal	Low	– Procedures shall be implemented and maintained to verify licenses and permits for the handling, transportation and disposal of waste. All relevant information is to be recorded in a Waste Management Register. – Materials should be transported to C&D recycling facilities for recovery. – Disposal of septage from site amenities shall be directed to holding tanks for licenced disposal, if a sewer connection is unavailable.	Low

5.2.2 Air

An Air quality impact assessment has been completed for the Project to determine any potential impacts on the nearby sensitive receptors during the construction and operational phases of the project. Dust impacts from the construction phases have been assessed to be low risk. Refer to Appendix L. Table 5.5 below outlines the construction impacts and mitigation measures for air.

Table 5.5 Construction impacts and mitigation measures for air

Impact	Initial risk rating	Mitigation	Residual risk rating
Climate			
Extreme rainfall can result in severe flooding which can directly impact the infrastructure, including inundation of drainage infrastructure, damage/malfunctioning of electrical infrastructure. In addition, flooding can impact the surrounding local road network, potentially restricting personnel and emergency access to the site.	Significant	The flooding report will highlight any construction flooding impact mitigation measures. – Keep emergency equipment (such as sandbags, pumps, and barriers) and materials on-site to respond quickly to unexpected flooding. – Develop emergency response plans with emergency muster and access points clearly established and maintain open communications with stakeholders. – Work with local authorities and flood management agencies to align site-specific flood control measures.	Moderate
Extreme temperatures and heatwaves have the potential to reduce the efficiency of electrical infrastructure and impact on construction activities (both personnel and rate of infrastructure renewal).	Low	– Develop response heat management strategies for personnel during construction where required.	Low
Greenhouse gas emissions produced by machinery and equipment from activities during construction.	Low	– Greenhouse gas emissions assessment will be completed during the detailed design phase.	Low
Air quality			
Dust resulting from trucks and other vehicles travelling on unpaved roads and other sources associated with material handling onsite, wind erosion from unsealed surfaces and stockpiles, unloading and turning compost stockpile and product screening.	Low	– A construction dust control protocol will be prepared detailing management measures including a method for recording dust complaints and monitoring requirements. – On days with forecasted and actual high winds (i.e., over 10 m/s), reduce work effort accordingly if wind-blown dust is observed to be leaving the site boundary. – Undertake dust suppression, as required, using water sprays, water extension agents, soil stabilising polymers or other media on: • Unpaved work areas subject to traffic or wind. • Spoil and aggregate stockpiles. • During the loading and unloading of dust generating materials. • Unpaved access tracks.	Negligible
Site establishment – delivery of site amenities and surveying and pegging of site.	Moderate		Negligible
Earth works: – Establishment of access road to work area. – Grading, excavation and general movement of earth materials.	Significant		Low
Road works and intersection works:	Significant		Low

Impact	Initial risk rating	Mitigation	Residual risk rating
– Removal of trees/stripping of topsoil. – Box out to required levels. – Subgrade and base course. – Asphalting. – Line marking. – Signage installation. – Defect inspection and cleaning.		– If the works are creating levels of dust which may significantly impact on public amenity, modify or stop the works until the dust hazard is reduced to an acceptable level. – Stockpile turning will be suspended during periods of high wind. – Maintain plant and equipment in good condition to minimise air emissions. – Water from the onsite storage dam will be used for dust suppression for the internal roads used by heavy vehicles.	
Civil works: – Demolition and earthworks. Civil works. – Ponds and other civil structures.	Significant	– The pavement types of the internal roads are not expected to produce significant dust emission. The pavement types are: • unbound granular pavements • stabilised pavements • asphalt pavements and surfacing stabilised pavements • sprayed bituminous surfacing • asphalt pavements and surfacing	Low
Mechanical installation of the following items: – Shredder – Drum screen – Platforms – Storage tanks/platforms – Blowers – Leachate system – Water system – Picking system – Control system and instrument mech – Odour control system – Interconnecting pipework.	Moderate		Negligible
Electrical installation – Blowers – Pumps – Screens – Motor control centre works – Interconnecting cabling – Electrical installation complete	Moderate		Negligible

5.2.3 Noise and vibration

A noise impact assessment has been completed for the construction phases of the project (refer to Appendix O) to identify and determine any potential impacts on the nearby sensitive receptors. The report concludes the project complies with the relevant legislation and recommends implementing a few mitigation actions and best practices to minimise negative impacts. Table 5.6 outlines the potential impact and mitigation for noise and vibration for the construction phase.

Table 5.6 Construction impacts and mitigation measures for noise and vibration

Impact	Initial risk rating	Mitigation	Residual risk rating
Noise			
Construction noise levels will be dynamic and vary based on the construction activities being undertaken. Construction noise activities may include: – Earthworks – Slab construction – Building construction – Embankment/ pavement works – Sealing works	Significant	**Site inductions** All employees, contractors and subcontractors are to receive an environmental induction. The induction should include: – All relevant project specific and standard noise and vibration mitigation measures. – Relevant licence and approval conditions. – Permissible hours of work. – Location of nearest sensitive receivers. – Construction employee parking areas. – Designated loading/unloading areas and procedures. – Site opening/closing times (including deliveries). – Environmental incident procedures. **Behavioural practices** – No swearing or unnecessary shouting or loud stereos/radios on site. – No dropping of materials from height, throwing of metal items and slamming of doors. **Community consultation measures** – Contact will be established with the local residents and the construction program and progress communicated on a regular basis, particularly when noisy or vibration-generating activities are planned. – Affected receivers will be notified of the intended work, its duration and times of occurrence. – This may include a local community update letters for specific construction activities and a Project info line. **Complaints management** Complaints will be managed in accordance with the procedure outlined below. Signage at each site will clearly and visibly provide a contact number and name to receive complaints and enquiries about construction.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		Potential complaints specific to these works could include: – A cluster of noise complaints. In this instance, the response would be to: – Verbally respond to complainant. – Provide a written response within seven calendar days, if the complaint cannot be resolved verbally. – Log the complaint, and any actions taken with regards to the complaint within a complaints register. – Undertake monitoring at the complainant's residence(s), where appropriate. – Investigate the nature and reasons of the impact. – Investigate and implement further mitigation measures to minimise the impact. **Construction hours and scheduling** – Comply with the recommended standard construction hours outlined in Section 4.1.1 Appendix O, unless out of hours work has been approved. – No truck movements before 7.00 am or after 6.00 pm. – For any work that would take place outside of normal construction hours: • Undertake an assessment of the potential noise and vibration impacts associated with the proposed activities and outline specific mitigation measures. • Residents potentially affected by such activities will be notified at least five days before hand. • Minimise consecutive night activities in the same locality and provide periods of quiet if activities occur for extended periods during the night. • Conduct activities in a manner that eliminates or minimises the need for audible warning alarms. **Construction respite period** – High noise and vibration generating activities may only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block. **Equipment selection** – Use quieter and less vibration emitting construction methods where reasonable and feasible.	

Impact	Initial risk rating	Mitigation	Residual risk rating
		Use and siting of plant – Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided. – The offset distance between noisy plant and adjacent sensitive receivers is to be maximised. – Plant used intermittently to be throttled down or shut down. Noise-emitting plant to be directed away from sensitive receivers. **Plan worksites and activities to minimise noise and vibration** – Plan traffic flow, parking and loading unloading areas to minimise reversing movements within the site. **Minimise disturbance arising from delivery of goods to construction sites** – Loading and unloading of materials/deliveries is to occur during standard construction hours. – Contractors are to avoid dropping materials from height where practicable, during loading and unloading. – Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.	

5.2.4 Water

A Surface Water Impact Assessment has been developed in collaboration with the design process for the project to develop in-built mitigation measures which seek to manage water-related aspects of the project (refer to Appendix N).

The low risk waterway ACT1 and regional ecosystems within the defined distance of a watercourse will be filled in with fill to accommodate the pad for the CMF. The upstream section of ACT2 will be impacted by the proposed freshwater dam.

A desktop groundwater assessment was completed to determine potential impacts to groundwater resources from the construction and operation of the Project. Several potential impacts were identified that could occur during construction including groundwater seepage in excavations, collection and disposal of seepage, contamination of soil and groundwater from unintentional spills of hazardous substances, ARD from potentially sulfidic-containing rock used as fill, importation of contaminated fill, and changes in the landform resulting in altered groundwater levels (refer to Appendix P).

Table 5.7 below outlines the construction impacts to water resources and the mitigation measures to address these impacts.

Table 5.7 Construction impacts and mitigation measures for water

Impact	Initial risk rating	Mitigation	Residual risk rating
Surface and stormwater			
During construction, substantial ground disturbance activities will be undertaken with the potential to generate sediment discharged to the downstream environment.	Moderate	– Construction phase erosion and sediment control plan to be prepared as a component of the facility design. Including provision of sediment basins. – During detailed design these would be sized in accordance with management of at least 80% of the annual average runoff to 50 mg/L of TSS. Erosion and drainage controls to be included as required in Section 2.4 Appendix N. – Staging of the works is also to be considered during detailed design, and in particular the provision of early-stage temporary sediment basin(s) before final pad levels are reached and leachate basins cannot be used as temporary sediment basins. – Development of a Stormwater Management Plan to address surface water quality risks – To minimise potential erosion and sedimentation impacts during construction of the composting manufacturing facility, a detailed Erosion and Sediment Control Plan (ESCP) would be developed based on relevant regulatory requirements. This ESCP would be prepared by a suitably qualified professional as certified by the International Erosion Control Association (IECA). The ESCP would be developed as an addendum to a EMP (C) that would address risks to the environment from a multitude of sources, including water and soil resources. – SOILCO will Prepare a Water Quality (groundwater, surface water and ponds) Monitoring Plan.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
Groundwater			
Excavations may intercept the groundwater table and/or springs may develop If groundwater is intercepted.	Low	– The construction contractor must prepare a Groundwater Management Plan that details the capture, testing, treatment (if required), and disposal/discharge of seepage.	Negligible
Contamination of groundwater from unintentional spills and leaks of hazardous substances, leaks/spills from plant/machinery, vehicle washdowns or chemical storage.	Moderate	– The construction contractor must prepare a Hazardous Materials and Waste Management Plan, that will outline measures for managing fuel and chemical handling, storage, distribution, spill response and cleanup, and managing generated waste during construction.	Low
Changes to groundwater levels and recharge dynamics from excavation and filling works.	Moderate	– The desktop assessment identified that groundwater is likely to be at depth, and recharge is likely low within the Project footprint, therefore changes in groundwater levels are not expected. – On-going groundwater monitoring of the proposed groundwater monitoring bores during and after construction will allow for early detection of any changes.	Negligible
Cut and fill utilising rock excavated at the site resulting in acid rock drainage (ARD) from using sulfidic rock fill (Walloon Coal Measures and Heifer Creek Sandstone geological units may have coal).	Moderate	– If during excavation coal is encountered, the material should be segregated and stockpiled for ARD testing. The stockpile should be placed on an impervious base and leachate generated from the stockpile must be captured, tested, treated if required, prior to discharge/disposal. – If the stockpile material is confirmed to produce acid, the rock must be managed in accordance with the Hazardous Material and Waste Management Plan, prepared by the construction contractor.	Low
Importation of fill material could potentially be contaminated, leaching contaminants into the groundwater.	Moderate	– The construction contractor is required to source fill from a reputable supplier that has a quality assurance system. – All imported fill must be certified as ‘clean’, prior to entering the site, and is to be free of debris, weeds and potential contaminants. – A register will be kept of all fill materials imported to the site (source and destination).	Negligible

5.3 Operation impacts and mitigations

The operational environmental impacts, mitigation measures and residual impacts for land, air, noise and vibration and water are outlined in Table 5.8, Table 5.9, Table 5.10 and Table 5.11. SOILCO has considered both direct and indirect impacts to the surrounding environment during the operational phase. A number of technical reports have been developed for the CMF Project and have determined potential impacts the CMF may have on the surrounding environment during the operational phase.

The risk assessment tables presented in this section outline proposed mitigation measures to be adopted to mitigate the potential impacts. The risks and mitigation measures have primarily been sourced from the technical studies undertaken for the CMF Project.

The operational mitigation measures outlined in this section will be incorporated into the contract documentation to make sure activities are managed in a way to minimise impacts to the environment. Specific environmental management measures will be incorporated into the EMP including water quality, erosion and sediment control, vegetation clearing, weed control, noise management and management of fauna and cultural heritage.

5.3.1 Land

Proposed and potential releases

The operation of the CMF has the potential for proposed and potential releases through mobilisation of contaminants though vehicle movements, wind and runoff. Potential impacts to public health and safety through dispersion of pathogens through bioaerosols and release of contaminants may also occur. Measures to mitigate these risks are included in Table 5.8.

Waste storage and disposal

Impacts associated with waste storage and disposal during the operation of the CMF would be managed through the provision of appropriate waste receptables to allow for waste segregation and regular emptying and/or replacement of waste receptacles. Hazardous wastes will be managed by appropriately qualified and licensed contractors and liquid wastes will be stored in appropriate containers with bunding. A waste management plan has been developed for the Project (Appendix H).

Table 5.8 Operational environmental impacts and mitigations for land

Impact	Initial risk rating	Mitigation	Residual risk rating
Bushfire Management			
Fire runs and disruptions to operations of the CMF. Due to the surrounding landscape, there is opportunity for fire to advance towards the facility at any angle. Due to the surrounding landscape and slope, fire runs are more likely to occur from the south and south-west direction. Fire impacts that are exacerbated from CMF materials, that result in significant bushfire risks for adjacent properties.	Moderate	**Asset Protection Zones (APZ)** – An APZ is an area that surrounds a building and/or structure and is to be maintained continuously in a no/low fuel condition to aid in the protection of buildings. – An APZ offers a defensible space for firefighters to work safely from radiant heat exposure. – APZ distances are calculated based on fire weather, fuel load and topography. An APZ of 10 kW/m^2 is proposed for the CMF as some components are hazardous in the context of a bushfire. – An APZ along the south-western boundary is not required due to the separation from the nearest hazardous vegetation by the freshwater dam. **Site layout** – The CMF has safe and convenient access to the road network (via upgrade of Mitchell Road) for evacuation purposes and access for emergency services. – Vulnerable components of the facility (e.g. fuel storage areas and buildings are at the northern extent of the development footprint, located outside the bushfire prone area and as far as practical from hazardous vegetation. – A one-way road for heavy vehicles is provided at the perimeter of the site, effectively separating the activities of the CMF from adjacent grass hazard. **Water supply and fire-fighting infrastructure**	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		– Static water supply in form of water tanks and booster pump. – Additional 45,000 L static water tank. • Non-flammable construction. • Medium rigid vehicle clear access within 6 m of the tank. • A 65 mm storz fitting for emergency fire service use if required. **Rehabilitation/re-vegetation and landscaping** – Further assessment to be completed to ensure that rehabilitation/ revegetation areas do not affect the vegetation hazard class or increase the severity of the hazard. – Adopt landscaping principles and species in accordance with Section 8 of the BRC 2019. Including: • Low threat (flammability) species adopted. • Tree specimens are smooth-barked species only and are not within 20km of the proposed CMF. • The use of organic mulches in garden beds should be avoided. **Land and Field Load Management** – Ongoing land and field load management practices. Both within and beyond the APZ. – Land outside the development footprint. **Operational procedures** – Evacuation procedures and site emergency plans: • Watch and act or emergency warning is issued for a location within 5kms of the CMF, advice is sort from emergency services and / or the site operations are immediately ceased and the facility evacuated. • For warnings (advice, watch and act or emergency) issued for locations within 10km of the site, in the surrounding area more broadly, contact is made with the fire brigade's fire warden for status and advice, and prepare to cease operations and prepared to evacuate the site. • Fire that is ignited on the site or in immediate proximity – cease operation and evacuate the site if safe to do so. Call 000. • On 'Extreme' and 'Catastrophic' fire danger days or under 'total fire bans. Activities that may generate an ignition threat are not conducted. Monitoring of emergency services media regularly throughout operation hours to check for local warnings.	
Visual Amenity			

Impact	Initial risk rating	Mitigation	Residual risk rating
Risk to impact of Design materiality as a result of the construction of the CMF.	Moderate	– Ensure the Project form, material and finishes are of high quality and are in keeping with the surrounding setting as to positively contribute to existing rural landscape character values. – Avoid or minimise the use of shiny or reflective materials to reduce associated visual impacts on surrounding sensitive receptors. – Consider specifying neutral colours for the cladding of external walls and roof that complements the rural landscape setting.	Low
The CMF being visible from residential areas and the state controlled road reserve.	Moderate	– Additional screen planting using shrubs and trees along Mitchell Road, will assist to preserve the landscape character of surrounding farmlands whilst minimising views from Beaudesert Boonah Road. – Increasing the density of planting along the site boundaries, to minimise visual impacts of the additional infrastructure and taller building within the Project. – Plant screening vegetation within the site boundary, to minimise visual impacts experienced from Beaudesert Boonah Road, Sandy Creek Road and the railway corridor. – Avoid the clearing of trees, especially mature and regulated trees, where possible, to retain existing character values. – Consider planting and vegetation throughout the Project area to break up the concrete expanses and hard standing and to aid successful blending of the Project into the surrounding rural landscape.	Moderate
Visual modifications due to signage	Low	– Where possible, minimise visual impacts of signage by: • Minimising signage dimensions. • Avoiding brightly illuminated signage. • Employing high-quality signage design. • Locating signage on buildings rather than freestanding.	Negligible
Erosion and Sediment Control			
Erosion and sediment mobilisation due to movement of vehicles on site.	Moderate	– Implementation of an Erosion and Sediment Control Plan. – Vehicles should be washed down off-site to prevent introducing contaminated runoff. – Minimise traffic and construction of additional roads. – Dust suppression systems. – The internal roads will be pavemented with different surface materials. Refer to Project drawing No 30034146-000-114 for more details regarding roads surface material.	Low
Erosion and sediment mobilisation (from wind) due to stockpiled materials on site.	Moderate		Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		– Water from the onsite storage dam will be used for dust suppression on unpaved work areas, and soil and sand stockpiles.	
Terrestrial Biodiversity			
Disturbance or clearing of vegetation and fauna habitats, which is likely to reduce the number of native fauna in the area.	Moderate	– Utilise existing cleared areas for laydown of materials. – Reduce light spill, associated with permanent infrastructure, into retained adjacent vegetation by limiting artificial light associated with operations to the minimum needed for safety. – Limit operation and maintenance work to day light hours, as is feasible, to decrease the impacts of light and noise pollution on nocturnal organisms within adjacent retained vegetation. – Speed limits will be established and enforced on all access roads and/or internal roads to reduce the potential for vehicle fauna interactions. – If fauna injuries occur within the Project area, a fauna spotter/catcher will capture and transport the injured animal to a qualified veterinarian for treatment or euthanasia (unless suitably qualified to undertake treatment/euthanasia themself). – Develop an ESCP in accordance with the Best Practice Erosion and Sediment Control guidelines (IECA, 2008) to minimise impacts to water quality and adjacent habitats. – The following management measures included in EMP: • An explanation of the general biosecurity obligation under the Biosecurity Act 2014. • Procedures for vehicle wash-downs and inspections. • Procedures for reporting sightings of prohibited and restricted pest species within the works area. • A requirement that weed infested vegetation is not mulched for re-use on-site, and off-site disposal for weed infested mulch at an appropriate facility. Prohibiting the movement of restricted invasive plants, including aquatic plants, such as *Salvinia molesta* (salvinia), into areas which do not contain the restricted invasive plants.	Low
Injury and mortality of wildlife due to wildlife moving through the project area during construction and operation.	Moderate		Low
Vegetation clearing for the project will reduce connectivity within and adjacent to the Project area.	Low		Negligible
Disturbance of wildlife by increased light, noise and vibration, resulting in injuries or mortalities of wildlife.	Low		Negligible
Operation of the CMF to impact surrounding native flora and fauna, resulting in reduction to surrounding native populations.	Moderate		Low
Impacts to MNES from the operation of the CMF.	Moderate	– Inspect and maintain all vehicles, machinery and plant regularly to minimise operational noise. – Restrict vehicle movements as far as practicable and minimise night driving. – Reduce light spill, associated with permanent infrastructure, into retained adjacent vegetation by limiting artificial light associated with operations to the minimum needed for safety.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		– Limit operation and maintenance work to day light hours, as is feasible, to decrease the impacts of light and noise pollution on nocturnal organisms within adjacent retained vegetation. – Speed limits will be established and enforced on all access roads and/or internal roads to reduce the potential for vehicle fauna interactions. – If fauna injuries occur within the Project footprint, a fauna spotter/catcher will capture and transport the injured animal to a qualified veterinarian for treatment or euthanasia (unless suitably qualified to undertake treatment/euthanasia themself). – Develop an Erosion and Sediment Control Plan (ESCP) in accordance with the Best Practice Erosion and Sediment Control guidelines (IECA, 2008) to minimise impacts to water quality and adjacent habitats. – Prepare a Biosecurity Management Plan (to be included in the EMP) that should incorporate descriptions and mapping of major weed infestations identified during a pre-clearing survey and appropriate management actions to be undertaken. As a minimum, the management actions should include: • An explanation of the general biosecurity obligation under the Biosecurity Act 2014. • Procedures for vehicle wash-downs and inspections. • Procedures for reporting sightings of prohibited and restricted pest species within the works area. • A requirement that weed infested vegetation is not mulched for re-use on-site, and off-site disposal for weed infested mulch at an appropriate facility. Prohibiting the movement of restricted invasive plants, including aquatic plants, such as *Salvinia molesta* (salvinia), into areas which do not contain the restricted invasive plants.	
Aquatic Biodiversity			
Potential operational impacts include water quality degradation resulting from storage pond runoff during high rainfall events and rubbish entering downstream waterways via stormwater drains on site.	Low	– Minimise lighting impacts into retained adjacent vegetation and wetland areas by reducing light spill outside of the subject site. – Prepare a Biosecurity Management Plan that should incorporate descriptions and mapping of major weed infestations identified during a pre-clearing survey and appropriate management actions to be undertaken. As a minimum, the management actions should include: • An explanation of the general biosecurity obligation under the *Biosecurity Act 2014.* • Procedures for vehicle wash-downs and inspections.	Negligible

Impact	Initial risk rating	Mitigation	Residual risk rating
		• A requirement for 'weed free' certification and checks prior to vehicles entering the construction site during site establishment. • Procedures for reporting sightings of prohibited and restricted pest species within the works area. • A requirement for the appropriate treatment of all restricted invasive plants in the construction area before construction begins. • A requirement that weed infested vegetation is not mulched for re-use on-site, and off-site disposal for weed infested mulch at an appropriate facility. • The identification of no-go zones and protection areas in the construction area. • Prohibiting the movement of restricted invasive plants, including aquatic plants, such as *Salvinia molesta* (salvinia), into areas which do not contain the restricted invasive plants. Design storage facilities and laydown areas a minimum of 50 m from any waterway, where possible. If areas cannot be located 50 m away, then bunds would need to be erected around the perimeter of the laydown area and checked daily for failures. Any failures in the bund wall will need to be rectified prior to any additional material being stored.	
Heritage			
Uncovering heritage items during operation.	Low	– Follow the Find, Stop Notify and Manage steps from the DES (Now DESI), *Managing Indigenous Cultural Heritage Guidelines (2015).* • FIND – A potential Cultural Heritage item or object is found. • STOP: STOP WORK IMMEDIATELY and install an exclusion zone around the area. • NOTIFY: notify a responsible person (e.g. Site Supervisor, Project Manager). • MANAGE: This may include precluding access to that area and liaison with relevant Aboriginal party/parties. The Contractor shall notify all site personnel of the object and/or area and proposed treatment of the object and/or area as soon as possible, but prior to commencing work on the next working day. Please immediately notify the responsible cultural heritage officer should further historical or Indigenous heritage values be identified (Tim Menkins 0448 119 104). Adhere to the requirements in the ACH Act for the need for an appropriate EMP.	Low
Waste			

Impact	Initial risk rating	Mitigation	Residual risk rating
General waste management activities during operation.	Moderate	– The Waste Management Hierarchy of "avoidance, reuse, recycling, disposal" will be followed to manage waste throughout site operations. – SOILCO will identify and maximise opportunities for supporting a circular economy that benefits waste avoidance and recycling of key priority waste streams. – A site induction shall be implemented for all site personnel detailing their responsibilities under the relevant waste management legislation and guidelines in regard to the minimisation, classification, management and reporting of waste on-site. – Signs within the site will be erected to encourage employees to reduce, reuse or recycle where possible. – Whilst waste remains on-site, site personnel are responsible for the transportation, storage, reuse and recycling on-site using their equipment. – Footpaths and road reserves on the site are to be maintained clear of rubbish, building materials and all other waste materials. – Litter is to be placed in available receptacles to prevent waste materials leaving the facility or entering the environment.	Low
Waste/reuse materials handling during operation.	Low	– If encountered or identified, hazardous waste shall be managed by appropriately qualified and licensed contractors in accordance with state legislation. – All waste inputs and outputs are entered into SOILCO's database and recorded in SOILCO's Waste Monthly Contribution Report on the Queensland Waste and Resource Reporting Portal. – Organic wastes to be processed to ensure effective pasteurisation and segregation of pasteurised material from unpasteurised materials and/or leachate, in accordance with SOILCO's composting procedures and operating protocols. – Waste receptacles, both general and recycling, shall be made available throughout the site and replaced or emptied regularly to prevent overflow. – Recyclables and non-recyclable wastes are to be stored in appropriate containers on-site until removed to an approved disposal or recycling facility. – All waste receptacles shall be covered and bunded where possible.	Negligible
Waste disposal during operation.	Low	– Disposal of sewage from site amenities shall be directed to holding tanks for licenced disposal, if a sewer is unavailable. – Procedures shall be implemented and maintained to verify licenses and permits for the handling, transportation and disposal of waste. All relevant information is to be recorded in a Waste Management Register.	Negligible

Impact	Initial risk rating	Mitigation	Residual risk rating
Fire risk to stockpiles in site.	Low	Measures outlined in the Guideline *Prevention of fires in waste stockpiles* (ESR/2020/5409) are implemented across the site.	Low
Public Health and Safety			
Pathogen risks such as Legionella and dispersion of bioaerosols.	Low	The risk of pathogen transmission is as low possible. The Facility Description (Section 4.3) includes Pasteurization – controlled microbiological transformation of organic materials, under aerobic and thermophilic conditions for a designed number of days, turns and specified temperature (above 55 °C). Section 4.5.1 outlines the processing and timing for pasteurisation. For the Bromelton CMF, the feedstock is to remain on the ASP between 18 – 21 days, depending on conditions and seasonal variation.	Negligible
Risk of contaminant management to address contaminants such as heavy metals and PFAS.	Low	SOILCO will be required to prepare a Hazardous Material Management Plan and a Waste Management Plan (as a part of the EMP) will be developed and implemented by the operator to describe how generated wastes are handled, stored, recycled and disposed of in accordance with applicable legislative and contractual requirements during operation of the facility. Waste Hierarchy Principles will be adopted during the operational phase and this involves the adoption of environmentally sensitive work practices and implementation of environmental safeguards to minimise waste and promote Ecologically Sustainable Development.	Negligible

5.3.2 Air

Emissions

The operational phase of the Project may cause impacts through greenhouse gas emissions being produced by vehicles, machinery and equipment at the CMF. A greenhouse gas emissions assessment will be completed during the detailed design phase. Further mitigation measures are included in Table 5.9.

Odour

The operational phase of the Project has the potential to cause odour impacts as a result of composting processes. Cumulative odour impacts with the nearby Bush's Proteins has also been considered but it is considered to be negligible (refer to Appendix B). An Odour Management Plan will be developed for the CMF which will include identification of all odour sources and measures to avoid the generation and minimisation of odours. Further mitigation measures are included in Table 5.9.

Dust

Dust emissions during operation of the CMF may be experienced from trucks and other vehicles travelling on unpaved roads and other sources associated with material handling onsite, wind erosion from unsealed surfaces and stockpiles, unloading and turning compost stockpiles and product screening. Dust mitigation measures are outlined in in Table 5.9.

Table 5.9 Operational environmental impacts and mitigation measures for air

Impact	Initial risk rating	Mitigation	Residual risk rating
Climate			
Extreme rainfall can result in severe flooding which can directly impact the infrastructure, including inundation of drainage infrastructure, damage/malfunctioning of electrical infrastructure. In addition, flooding can impact the surrounding local road network, potentially restricting personnel and emergency access to the site.	Significant	Keep emergency equipment (such as sandbags, pumps, and barriers) and materials on-site to respond quickly to unexpected flooding.	Moderate
Extreme temperatures and heatwaves have the potential to reduce the efficiency of electrical infrastructure and impact on operations and maintenance activities (both personnel and rate of infrastructure renewal).	Low	Develop emergency response plans with emergency muster and access points clearly established and maintain open communications with stakeholders. Work with local authorities and flood management agencies to align site-specific flood control measures.	Negligible
Air quality (Odour and Dust)			
Potential for odour to exceed the highest predicted 99.5th percentile odour impact of 2.1 OU at the industrial receptor R7.	Low	– Maintain plant and equipment in good condition to minimise ignition risk of fuel or chemicals, spills, and air emissions that may cause nuisance. – Mixing putrescible feedstock materials immediately into the compost process, if not pre-treated or dried	Low
Potential for odour to exceed the highest predicted 99.5th percentile odour impact of 0.6 OU at the residential receptor R6.	Low		Low

Impact	Initial risk rating	Mitigation	Residual risk rating
		– Implementing a management strategy for turning open windrows to prevent anaerobic conditions which is determined by an experienced operator through site trials and measurements – Minimising turning events for open windrows, especially during the first 7-10 days of composting, with only the minimum turning required to support pasteurisation and moisture redistribution and maintenance of aerobic conditions. – Train staff (internal and contractors) on odour management strategy and all relevant procedures. Requirements to be included in the Odour Management Plan. – Install and operate as needed an aerator in the leachate pond to reduce the odour potential from the stored leachate – Scheduling activities for times when they will have least impact (e.g. avoid undertaking odour-generating activities such as turning windrows of compost at times when it is windy and the odour might carry to a sensitive or commercial place – If the site activities are emitting odour concentrations which may significantly impact the nearby receptors, the works should be modified or stopped until the hazard is reduced to an acceptable level. This can include shredding of raw feedstock or turning of windrows. – An Odour Management Plan (OMP) to be developed (as part of the EMP) prior to the activity commencing which includes: • Identification of all odour sources, and potential odour sources at the site, including odours and potential odours generated from the activity; and • A requirement that odour investigations be completed by an appropriately qualified person; and • An analysis of routine and non-routine processes and operating conditions that could result in, and potentially result in, odour emissions; and • Measures to avoid the generation and minimise the impacts of odours; and • At a minimum, annual reviews of the effectiveness of the measures. – Upon receipt of a valid odour complaint, engage a suitable experienced odour professional to conduct odour surveillance (odour surveys) to determine the extent of odour from the site and investigate what site activities led to elevated odour.	
Cumulative odour impacts due to the distinct odour character associated with Bush's Proteins.	Low	Not expected to occur as the odour from nearby emitters is not similar to that of the odour character experienced from composting, therefore cumulative impacts are not expected.	Negligible

Impact	Initial risk rating	Mitigation	Residual risk rating
Dust emissions from trucks and other vehicles travelling on unpaved roads and other sources associated with material handling onsite, wind erosion from unsealed surfaces and stockpiles, unloading and turning compost stockpiles and product screening.	Low	Dust emissions from unpaved access and site roads, as well as all composting operations are readily managed with application of watering and proactive dust controls. Water from the onsite storage dam will be used for dust suppression for the internal roads used by heavy vehicles. The pavement types of the internal roads are not expected to produce significant dust emission. The pavement types are: – unbound granular pavements – stabilised pavements – asphalt pavements and surfacings stabilised pavements – sprayed bituminous surfacings – asphalt pavements and surfacings	Low
Greenhouse gas emissions produced by machinery and equipment from activities during operations.	Moderate	Greenhouse gas emissions assessment will be completed during the detailed design phase.	To be determined

5.3.3 Noise and vibration

Noise modelling undertaken for the Project indicates that noise levels during the operational phase of the CMF are expected to comply with the established project noise criteria at all receivers (refer to Appendix O). Although noise modelling indicates the operation of the CMF would comply with noise criteria, best practice environmental management practices are proposed, including avoidance of work involving noise at times when it is most likely to cause environmental nuisance, such as night-time, Sundays and public holidays. Equipment should be switched off when not in use and machinery and equipment should be chosen that has lower noise emissions. A Noise Management Plan will also be development and will include processes for dealing with noise complaints. Refer to Table 5.10 for a list of operational environmental impacts and mitigation measures for noise and vibration.

Table 5.10 Operational environmental impacts and mitigation measures for noise and vibration

Impact	Initial risk rating	Mitigation	Residual risk rating
Noise			
The operation of the site is likely to cause some additional noise levels than the pre-existing environment.	Low	– A Noise Management Plan (NMP) be prepared (as a part of the EMP) for the proposed development. It should contain (but not limited to): • A noise complaints management system is to be implemented whilst the completed facility is in operation. The following process should be established to ensure all complaints are dealt with in an appropriate manner: a. A staff member will be nominated to deal with complaints from the community. Contact details of nominated staff member will be displayed at entry point of the site	Negligible
The site will generate additional traffic into the road network, which may cause noise impacts on sensitive recovered along the road network near the site.	Moderate		Low

		b. All complaints will be logged within a complaint register. An archive of complaints will be maintained, documenting the nature of the complaint and the actions implemented for resolving the complaint c. The complaint log should be reviewed at regular intervals to identify common complaints and recurring issues. The review can be used to adjust operations to reduce the number of complaints moving forward. d. The complaints log will be made available to relevant regulatory authorities on request. • Details of the noise mitigation measures implemented by the Site. – Clear signage should be erected at site entrances advising people that they must not generate excessive noise and leave the site in a quiet and sensible manor to minimise any potential impacts of the surrounding amenity. – Dump trucks, loaders (L90 and L150) and shredder operations should be limited to daytime operations or only operated near the centre of the Site during the start of the day (6am to 7am) to reduce noise impacts during the morning shoulder period. **Best practice environmental management practices** – Avoid work involving noise at times when it is most likely to cause environmental nuisance, such as night-time, Sundays or public holidays. – Switch off equipment when not in use or limit the hours of operation. – Select the quietest machinery and equipment available and find quieter processes or ways of performing tasks (e.g. investigate whether there are suitable alternatives to reversing alarms on vehicles and select vehicles with low noise emissions). – Ensure that roads have a suitable and well-maintained surface and limit the amount, type, times and speed of vehicle movements. – Start plant and vehicles sequentially rather than all at the same time. – Investigate whether it is possible to fit noise reduction features onto equipment (e.g. noise absorbent panelling or rubber lining). – Use existing screens or site features to their advantage to reduce noise. – If the noise id directional, point the source away from noise-sensitive locations). – Ensure that equipment, vehicles and acoustic screens or other noise mitigation devices are properly maintained. – Ensure that each staff member is aware of their responsibilities to reduce noise emissions, and how this can be achieved. – Monitoring is undertaken at a sufficient frequency to demonstrate that the activity is not causing or likely to cause environmental harm. This may include background monitoring of a sufficient period to demonstrate a background level, taking into consideration natural and seasonal variations.	

5.3.4 Water

Discharge and releases

The potential impacts of the Project were assessed with relation to surface water and were found to be generally acceptably managed based on the following:

- Appropriate separation of water types in accordance with best-practice for composting sites and the ERA53(s) Model Operating Conditions (MOC).
- There will be no direct discharge of runoff to the surrounding environment. Provision of in excess of 30 ML of leachate storage sized in exceedance of the 24-hour event supported by the MOC, with reuse in the early stage of composting. No proposed active release of leachate and no overflow up to a design standard rainfall of 900 mm falling within a 6 month period.
- Separation of stormwater from contamination and management through provision of a stormwater treatment train in accordance with Seqwater (2017) guidelines.
- Estimation of water demands by SOILCO and confirmation that during dry periods they can be sourced via road tankering. Provision of a 30ML harvesting storage dam to minimise reliance on tankering.
- Location of the operational site outside the 1% AEP flood impact for the identified flow paths adjacent to the site in accordance with Seqwater (2017) guidelines and the Scenic Rim Hazard Overlay Code.
- Containment of the leachate catchment offsetting the impact of increasing imperviousness on peak discharge rates.
- Separation distances from identified flow paths consistent with the understood intent of the Seqwater (2017) guidelines.
- Provision of an ESCP.

Groundwater

Operationally, potential impacts from operational activities were related to changes in groundwater levels from reduced recharge, contamination of soil and groundwater from unintentional spills of hazardous substances, and seepage of contaminated leachate to groundwater. Refer to Table 5.11.

Table 5.11 Operational environmental impacts and mitigation measures for water

Impact	Initial risk rating	Mitigation	Residual risk rating
Surface and stormwater			
Composting sites generate differing water types distinguished by their respective water quality that may impact downstream environments.	Moderate	– Diversion of upstream run-on around the facility. – Designation of respective leachate and stormwater catchments within the operational site, with separate stormwater conveyance systems. – Preparation and regular update of a Operational Management Plan.	Low
Untreated discharge of runoff that has come into significant contact with organic material.	Moderate	Provision of 30 ML of contact water storage with disposal via reuse in the pasteurisation phase of the process. No proposed active release of leachate and no overflow up to a design standard rainfall of 900 mm falling within a 6-month period.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
Runoff from impervious site areas not impacted by organic material includes a water quality risk consistent with typical urban stormwater, requiring consideration accordingly.	Low	Provision of a typical urban stormwater treatment train including 500 m^2 of bio-retention filter area and a Gross Pollutant Trap.	Low
Water is required for the composting process, including in the pasteurisation and maturation processes, with leachate only able to be used in the pasteurisation process.	Moderate	– Provision of a 30 ML harvesting storage to the west of the operational area. – Truck water tanker delivery during dry periods to meet water supply needs.	Low
Impact from external floodwaters on operations and water quality risks associated with site inundation.	Moderate	– The upgrade of Mitchell Road includes provision of appropriate flood protection and flow conveyance.	Low
Increase the peak rate of runoff and impact downstream flooding conditions due to increasing impervious areas.	Moderate	– 3 leachate storage dams will be included on site – Adjustment of leachate catchment area when full processing rate is not occurring. – Preparation of a detailed water balance model based on actual site operational data and provide emergency containment bunding if required.	Low
Groundwater			
Hardstand areas and water harvesting. Changes in landform resulting in potential changes groundwater recharge dynamics	Low	– The desktop assessment identified that groundwater is likely to be at depth, and recharge is likely low within the Project footprint, therefore changes in groundwater levels are not expected in the vicinity of the facility. – Maintain environmental flows in downstream water courses, so that recharge of alluvium in Allan Creek is not altered.	Negligible
Transport and storage of hazardous substances. Leak/spill from hazardous substances storage / transport, contaminating soils, surface water and groundwater	Low	SOILCO must prepare Hazardous Materials and Waste Management Plan (as a part of the EMP), that will outline measures for managing fuel and chemical handling, storage, distribution, spill response and cleanup, and managing generated waste during operation of the facility.	Negligible
Seepage from leachate dams. Contaminated water, seeping into groundwater	Moderate	– Design of the leachate dam indicates that the dam will be fully lined with either: • 600 mm thick recompacted clay with a permeability of less than 10-9 m/s; or • A high-density polyethylene geomembrane liner with a minimum thickness of 1.5 mm. – The facility will have a designated leachate management system, as per the QLD ERA 53 Organic material processing guidelines. – Seepage may be detected through installation of spears around the dam.	Low
Seepage of contaminants through the hardstand underlying the aeration pad, windrow pad, and	Moderate	– Hardstand areas are to be constructed with a low-permeability base that prevents leachate from seeping into underlying soils and groundwater.	Low

Impact	Initial risk rating	Mitigation	Residual risk rating
maturation area. Contaminated leachate, seeping into soils and groundwater		– The facility will have a designated leachate management system, as per the QLD ERA 53 Organic material processing guidelines.	

6. Statutory planning framework

The Coordinator-General assesses and decides all MCU SDA applications and requests within the Bromelton SDA. The Scenic Rim Regional Council is responsible for assessing and deciding other assessable development such as Reconfiguring a Lot and Operational Works development applications.

6.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation and is administered through the DCCEEW. The EPBC Act provides the legal framework to protect and manage MNES. There are currently nine MNES protected under the EPBC Act:

– World heritage properties
– National heritage properties
– Wetlands of international importance (Ramsar wetlands)
– Nationally listed threatened species and ecological communities
– Listed migratory species
– Commonwealth marine parks
– Great Barrier Reef Marina Park
– Nuclear actions (including uranium mining)
– A water resource, in relation to coal seam gas development and large coal mining development.

Where a proposed development could have a 'significant impact' on any MNES, a referral may be required to the Australian Government Minister for the Environment. The onus is on the owner or manager of the place/person proposing to undertake the action to determine whether a significant action is likely to be caused.

An ecological assessment (aquatic and terrestrial) was completed to identify environmental values, inform design decisions and recommend appropriate mitigation of potential ecological constraints. The ecological assessment is provided in Appendix G.

To mitigate potential impacts, the following measures will be implemented:

– Design: Vegetation clearing limits and no-go zones
– Environmental Management Plan (refer to Appendix K)
– Operation: Erosion and sediment control plan and biosecurity management plan.

6.2 State Development and Public Works Organisation Act 1971

The Project area is located within the Bromelton SDA and is subject to the Bromelton SDA Development Scheme under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The main purpose of the SDPWO Act is to facilitate co-ordinated and environmentally responsible infrastructure planning and development in Queensland. A regulation may declare any part of the State or of any area over which the State claims jurisdiction to be an SDA, if the Governor in Council is satisfied that the public interest or general welfare of persons resident in any part of the State requires it.

SDA's are created under Section 77 of the SDPWO Act. The SDAs are listed in the *State Development and Public Works Organisation (State Development Areas) Regulation 2019*, which identifies the regulatory maps for each SDA. As soon as practicable after the declaration of a SDA, the Coordinator-General prepares a development scheme in relation to that area. The approved development scheme for a State development area may regulate development in all or part of the SDA. If another Act or law would, apart from the development scheme, regulate

the regulated development, the other Act or law does not apply to the regulated development to the extent the other Act or law regulates that development.

The Coordinator-General assesses and decides all MCU SDA applications and requests within the Bromelton SDA. In accordance with Section 1.3 of the Bromelton SDA Development Scheme, the Scenic Rim Regional Council is responsible for assessing and deciding all other assessable development under the local *Scenic Rim Planning Scheme*.

6.3 Bromelton State Development Area Development Scheme

The Bromelton SDA was declared in 2008 with the Bromelton SDA Development Scheme applicable to all development within the Bromelton SDA. The subject site and Project area are mapped within the Bromelton SDA and the Bromelton SDA Development Scheme is the relevant categorising instrument. The Coordinator-General as the assessment manager. The current Bromelton SDA Development Scheme is dated December 2017.

The applicant is seeking approval of a MCU development permit for a special industry (CMF) in the Special industry precinct under the Bromelton SDA.

In accordance with Section 2.1.1(3) of the Bromelton SDA Development Scheme, a properly made SDA application will be assessed against the development assessment framework outlined below:

– The strategic vision for Bromelton SDA
– The overall objectives for development in the Bromelton SDA
– The preferred development intent for each development precinct
– SDA-wide assessment criteria

An assessment of the Project against the relevant framework of the Bromelton SDA Development Scheme is provided in Appendix D. An assessment of the Project against the strategic visions of the Bromelton SDA is provided in Table 6.1.

Table 6.1 Assessment Against the Strategic Visions for the Bromelton SDA

Strategic Vision	Proposal Response
2. The vision for the Bromelton SDA is:	
a. establish Bromelton as a major industrial area for industrial development of regional, State and national significance	**Complies** The CMF Project involves the development of a organic industry and will support the vision for Bromelton to become a major industrial area. The Bromelton CMF Project aligns with objectives in the Queensland Government Queensland Organics Strategy 2022–2032 by reducing the amount of organic waste going to landfill and it will offer economic and social benefits through employment and local business opportunities in South East Queensland.
b. encourage industrial development and support services to take advantage of the access to key rail and road networks	**Complies** The CMF needs to be within close proximity to a State-controlled road and via Mitchell Road can connect to the State controlled road. Beaudesert-Boonah Road is an approved B-Double route and B-Doubles will be used for the operation of the CMF. The location of Bromelton CMF and upgrade of Mitchell Road reserve means that the traffic from the CMF will not adversely impede on road users from other surrounding commercial business. TMR and Scenic Rim Regional Council both supported the road connection point for the proposed CMF. SOILCO is addressing separate approvals with TMR to upgrade the Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road In addition, Mitchell Road will be upgraded to facilitate the access to the subject site. Scenic Rim Regional Council

Strategic Vision	Proposal Response
	have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from SRRC for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network. The proposed CMF in Bromelton supports industrial development and services in several ways: – Strategic Location: The facility is situated near road networks, making it easier for businesses to transport raw materials and finished products. This accessibility attracts industries that rely on efficient logistics. – Sustainable Practices: By promoting composting and waste management, the facility encourages environmentally friendly practices. This can enhance the reputation of surrounding businesses and attract eco-conscious industries. – Resource Availability: The facility provides a reliable source of compost, which can be beneficial for agriculture and landscaping businesses in the area. This creates opportunities for collaboration and supply chain development. – Economic Development: By supporting local agriculture and landscaping sectors, the facility helps stimulate the local economy, encouraging the establishment of related businesses and services. – Networking Opportunities: The presence of the compost facility can facilitate partnerships between different sectors, leading to innovation and shared resources. – Job Creation: The facility itself can create jobs and attract workers to the area, further boosting local economic activity.
c. maximise opportunities for the clustering and co-location of synergistic developments, including supporting infrastructure	**Complies** The proposed CMF in Bromelton supports industrial development and services in several ways: – Strategic Location: The facility is situated near road networks, making it easier for businesses to transport raw materials and finished products. This accessibility attracts industries that rely on efficient logistics. – Sustainable Practices: By promoting composting and waste management, the facility encourages environmentally friendly practices. This can enhance the reputation of surrounding businesses and attract eco-conscious industries. – Resource Availability: The facility provides a reliable source of compost, which can be beneficial for agriculture and landscaping businesses in the area. This creates opportunities for collaboration and supply chain development. – Economic Development: By supporting local agriculture and landscaping sectors, the facility helps stimulate the local economy, encouraging the establishment of related businesses and services. – Networking Opportunities: The presence of the compost facility can facilitate partnerships between different sectors, leading to innovation and shared resources. – Job Creation: The facility itself can create jobs and attract workers to the area, further boosting local economic activity.

Strategic Vision	Proposal Response
d. maximise the utilisation of the rail network by establishing multi modal freight and logistics operations, manufacturing and warehousing facilities, and industries that are reliant on rail access	**Complies** The CMF Project will not require the use of the Interstate Line and is not considered to impeded on other uses accessing the rail network.
e. encourage activities that require large lots, separation distances or other specialist needs	**Complies** The CMF needs to be setback from sensitive receptors and being located within SDA precinct is approximately setback from sensitive receptors. The CMF is located within an area that his limited environmental values. Separation distances has been considered during the design phase of the Project.
f. protect the continued operation and future development of existing industrial activities, appropriately located rural activities and the regionally significant extractive resources within the Bromelton SDA from incompatible development and encroachment	**Complies** The Project will not impact upon the continued operation and future development of existing industrial activities, rural activities or extractive resources within the Bromelton SDA. The Project is located on freehold land that is currently not burdened by any easements. There are no agricultural activities occurring within the development footprint for the Project.
g. leverage the opportunities created by the proximity of the Bromelton SDA to the Beaudesert centre, by fostering synergies between industry and business activity clusters.	**Complies** The CMF Project will leverage the opportunities created by the proximity of the Bromelton SDA to the Beaudesert centre, by fostering synergies between industry and business activity clusters. SOILCO presented the project to the Beaudesert Chamber of Commerce and a newspaper article was published to share with the community the goals of the compost manufacturing facility. Moreover, the benefits to the environment and the community were explained, as this project will reduce the amount of waste that is sent to landfills, will generate compost for agricultural use, and will create job opportunities for the local community. All the Bromelton SDA landholders are members of the Bromelton Business Group, as well as SOILCO, therefore they regularly meet to discuss about different topics concerned to the Bromelton SDA.
3. The strategic vision is supported by the overall objectives for development and preferred development intents of development precincts within the Bromelton SDA.	**Complies** The CMF is considered to meet the intent of the Special industry precinct in the Bromelton SDA.

6.4 State Planning Policy 2017

The *State Planning Policy 2017* (SPP) sets out the State's interests in land-use planning and development across Queensland. The SPP was updated and introduced in 2017 to coincide with the release of the *Planning Act 2016*. The SPP details the matters of State interest in land use planning which enables development, protects our natural environment, and allows communities to grow and prosper. The State interests relevant to the Project are discussed in Table 6.2.

An assessment of the Project against the relevant framework of the State Planning Policy is provided in Appendix E.

Table 6.2 State interests relevant to the Project

SPP Theme	Relevance to the Project	Compliance with SPP
Liveable communities and housing	There is no mapping associated with this State interest	**Not Applicable** Although not applicable, the proposal complies with the intent as it provides large-scale organics processing

SPP Theme	Relevance to the Project	Compliance with SPP
		infrastructure assets to serve Queensland Councils, commercial waste generators and local communities. The CMF will be critical in assisting South-East Queensland to achieve ambitious recycling targets and counter the financial impact of rising landfill levies. The Project contributes with the transition towards circular economy approaches.
Economic growth	– Agricultural land classification - class A and B	**Complies** While the subject site is located on land mapped over this State interest, the Project footprint for the CMF is located outside the agricultural land classification area. The Project provides a service necessary to support a strong agriculture industry and associated agricultural supply chains. The Project will not compromise the longevity of the surrounding agricultural land.
Development and construction	– State Development Area	**Complies** The subject site is located within the Bromelton SDA and this report addresses the Bromelton SDA planning scheme requirements.
Environment and heritage	– Biodiversity • MSES - Wildlife habitat (koala habitat areas - core) • MSES - Regulated vegetation (category B) • MSES - Regulated vegetation (category C) • MSES - Regulated vegetation (essential habitat) • MSES - Regulated vegetation (intersecting a watercourse)	**Complies** <u>Biodiversity/water quality</u>: An ecological assessment (aquatic and terrestrial) was completed to identify environmental values, inform design decisions and recommend appropriate mitigation of potential ecological constraints, refer to Appendix G. It was found that: – The Project is proposed in an area of previously cleared land utilised for agricultural activities, with occasional trees and very low scattered regrowth. The Project area only supports cleared, ephemeral drainage lines and there are no watercourses, wetlands or permanent water sources present. Terrestrial: – Six conservation significant fauna species were considered likely or with potential to occur, due to the presence of suitable habitat and historical records within the Study area, these species and the Project's impact to potentially suitable habitat within the Project footprint is summarised below: Likely to occur – White-throated needletail – 24.36 ha of suitable habitat – Koala – 2.19 ha of suitable foraging habitat and 22.16 ha of suitable dispersal habitat – Grey-headed flying-fox – 2.42 ha of suitable foraging habitat Potential to occur – Yellow bellied glider (south-eastern) –2.35 ha of marginally suitable habitat – Greater glider (southern and central) –2.35 ha of marginally suitable habitat – Short-beaked echidna – 0.85 ha of ecologically significant locations and 23.51 ha of suitable general habitat Substantial avoidance has been achieved by locating proposed infrastructure footprints in areas of existing disturbance. Mitigation measures are likely to be effective in substantially reducing the extent and magnitude of impact on terrestrial ecological values

SPP Theme	Relevance to the Project	Compliance with SPP
		through the construction and operation phases of the Project. – Aquatic: No aquatic MSES occur within the Project area and therefore no significant impact assessments were required. To mitigate potential impacts, the following measures will be implemented: – Design: Vegetation clearing limits and no-go zones – Construction: Environmental management plan (refer to Appendix K) – Operation: Erosion and sediment control plan and biosecurity management plan. Cultural heritage: While no cultural heritage points were recorded under this State interest, the ongoing nature of cultural heritage is acknowledged. A cultural heritage assessment was prepared (refer to Appendix R). It was found that: – Desktop assessment: There were two known cultural heritage values within 1km of the Project area as recorded on the DSDSATSIP Indigenous cultural heritage database and register, the commonwealth heritage list, the state heritage list, and the local heritage register. – Field surveys: There were Indigenous heritage values found across the subject sites including numerous stone artefacts and given risk factors identified in the landscape, the likelihood of further cultural heritage values is considered significantly high. Consultation with traditional owners will be required.
Water quality	– Water supply buffer area – Water resource catchments	**Complies** The subject site is located within the water supply buffer area which is managed by Seqwater. The potential impacts of the Project were assessed with relation to surface water, including the in-built management measures. The water related risks were found to be generally acceptably managed based on the following: – Appropriate separation of water types in accordance with best-practice for composting sites and the ERA53(s) Model Operating Conditions (MOC). – Although the initial calculation for a containment based on a 10-year 24-hour event (152mm) and 100% runoff assumption sized the ponds in 17 ML, the project will provide of 30 ML of leachate storage sized in exceedance of the 24-hour event supported by the MOC, with reuse in the early stage of composting. – No proposed active release of leachate and no overflow up to a design standard rainfall of 900 mm falling within a 6 month period. – Separation of stormwater from contamination and management through provision of a stormwater treatment train in accordance with Seqwater (2017) guidelines. – Estimation of water demands by SOILCO and confirmation that during dry periods they can be sourced via road tankering. Provision of a 30ML harvesting storage to minimise reliance on tankering. – Location of the operational site outside the 1% AEP flood impact for the identified flow paths adjacent to the site in accordance with Seqwater (2017) guidelines

SPP Theme	Relevance to the Project	Compliance with SPP
		and the Scenic Rim Hazard Overlay Code (refer to 2.5.3). – Containment of the leachate catchment offsetting the impact of increasing imperviousness on peak discharge rates. – Separation distances from identified flow paths consistent with the understood intent of the Seqwater (2017) guidelines. – Provision of an erosion and sediment control plan, based on relevant regulatory requirements, to be updated and confirmed during detailed design. An assessment against the Seqwater development guidelines water quality management in drinking water catchment has been completed for the project and is included in Appendix F, and addressed in Appendix N.
Safety and resilience to hazards	– Flood hazard area - Local Government flood mapping area* – Bushfire prone area	**Complies** Flood hazard: A flood assessment was prepared to understand the flood hazard for 63.2%, 50%, 20%, 10%, 2%, 1% and 0.2% annual exceedance probability (AEP). It was found that: – In the upper tributaries across the southern extent of the Project lot, for the 1% AEP storm, the lateral flood extents are shown to be topographically constrained, with minimal bank storage of flood waters. Peak flood depths were modelled up to 1.18 m within the tributary and generally less than 0.4 m in the bank areas. – The topography flattens slightly in the northern portion of the Project lot. In the 1% AEP flood event, the lateral extent of the flood waters in this area extends from the north and occur out of stream bank areas. With flood depths were predominantly less than 0.2 – 0.4 m. – Outside of the Project lot, at the confluence of the tributaries across the site, in stream peak flood depths of up to 1.5 m were modelled. Bushfire: A bushfire hazard assessment and management plan was prepared (refer to Appendix Q). It was found that: – This area of South East Queensland has a forest fire danger index (FFDI) of 57 and is mapped as containing the 3. Eucalypt woodlands to open forests (9-15b) broad vegetation group. – The highest fuel load observed on/within 150m of the Project footprint is 20.8t/ha according to the regional ecosystem data. – The overall site slope is approximately 6.5 degrees from the southern boundary, down toward the north. – The recommended asset protection zone is 38.4m along the southern boundary of the development footprint. The Project can implement mitigation measures for the threat of bushfires, and the report provides a range of measures to reduce the risk to people and property to a tolerable level.
Infrastructure	Nil recorded for the subject site	**Not Applicable**

6.5 ShapingSEQ 2023

ShapingSEQ 2023 is the Queensland Government's long-term vision for growth in the South East Queensland region. ShapingSEQ 2023 took effect on 15 December 2023. As shown in Figure 6.1, the Project is located within the Urban Footprint and SEQ major enterprise and industrial area.

Under section 8(4) of the Planning Act, when assessing an application, the relevant regional plan will apply to the extent of any inconsistency with a local planning instrument such as a planning scheme.

As per the Scenic Rim Regional Council Planning Scheme 2020 section 2.2 *"The Minister has identified that the planning scheme does not integrate the outcomes of the South East Queensland Regional Plan 2017 (Shaping SEQ), specifically the strategic framework as it applies in the planning scheme area".*

An assessment of South East Queensland Regional Plan 2017 (Shaping SEQ) has revealed that the regional plan references the Bromelton SDA briefly as a key industrial area.

In ShapingSEQ 2023, the Bromelton SDA is listed as a major enterprise and industrial area. Within the regional plan, the Queensland Recycling Enterprise Precinct Location Strategy (2022) identifies two types of precincts, namely:

– *"Prepare precincts: consolidation locations for waste that can be recycled or transformed. These precincts can leverage existing waste and resource recovery centres.*
– *Transform precincts: large-scale locations where waste is recycled or transformed. These would need to be specialised locations with adequate buffering from other urban uses".*

Bromelton is also identified as a possible location for a Recycling Enterprise Precinct (REP) given its unique strategic location in the region. ShapingSEQ 2023 further states that governments, industry and the Queensland Government and while the location of REPs relies on the availability of suitably zoned land, other factors will determine appropriate locations and timing of future development. Port of Brisbane, Bromelton and Toowoomba are indicative sites that have been identified based on analysis of opportunities.

The proposed development of the Bromelton compost manufacturing facility is directly progressing the REP strategy as part of Shaping SEQ2023 as it provides for the provision of a location for waste that can be transformed.

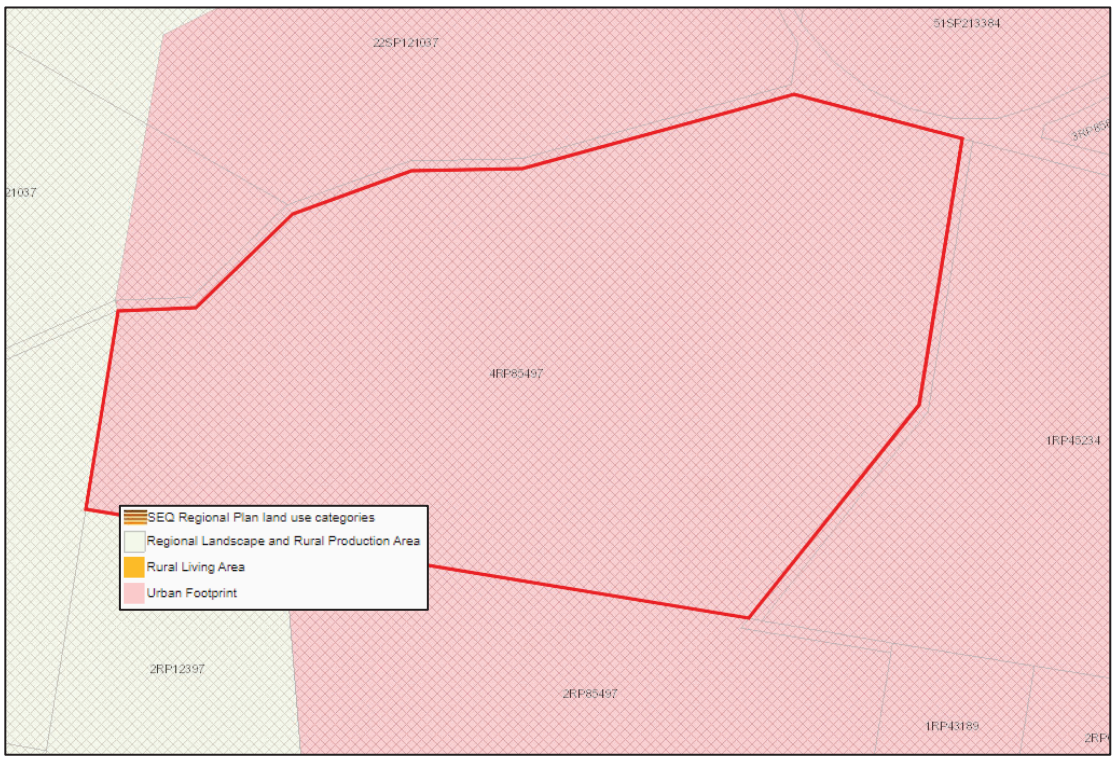


Figure 6.1 ShapingSEQ 2023 – Land use categories (Source: Development Assessment Mapping System)

6.6 Seqwater Development Guidelines

The CMF complies with the Queensland Government State Planning Policy (SPP), established to define the matters of state interest in land-use planning and development. Regarding Water Quality, the project was assessed against the Seqwater Development Guidelines, which purpose is to ensure that development and activities in a water resource catchment are appropriately sited, designed and managed to maintain water quality, flow regimes, environmental values and the physical integrity of natural processes to protect drinking water supply.

Multiple technical reports have been prepared for the proposed CMF, and they demonstrate the project's compliance with the Water Quality requirements. Refer to Appendix F for an assessment on the benchmarks for assessable development, Appendix G for the Aquatic Ecology Assessment, Appendix N for the Surface Water Impact Assessment, Appendix P Groundwater Assessment and Appendix U Site and Soil Evaluation Report with the calculations for the wastewater treatment plant.

6.7 Scenic Rim Planning Scheme

As aforementioned, The Coordinator-General assesses and decides all MCU SDA applications and requests within the Bromelton SDA. In accordance with Section 1.3 of the Bromelton SDA Development Scheme, the Scenic Rim Regional Council is responsible for assessing and deciding all other assessable development under the local *Scenic Rim Planning Scheme* (Planning Scheme).

However, consideration must still have regard to all planning instruments that relate and, therefore, consideration must still be given to the local Planning Scheme.

6.7.1 Zoning

The subject site is mapped within the Special Purpose Zone (BSDA – Bromelton State Development Area Precinct), refer to Figure 6.2. The purpose of the Special Purpose is to:

a. "provide for public facilities and infrastructure that are publicly or privately owned or operated; and

b. ensure that incompatible uses do not encroach on the public facilities and infrastructure.

Editor's Note - The Scenic Rim Planning Scheme does not apply to the following development of the below land contained within the Special Purposes Zone:

i. Material change of use in the Bromelton State Development Area, which is required under section 84 of the State Development and Public Works Organisation Act 1971, to be assessed by the Coordinator-General against the provisions of the Development Scheme for the Bromelton State Development Area;

ii. All development in the Defence Land (Kokoda Barracks, Canungra), which is regulated under the Commonwealth Defence Act 1903; and

iii. All development in the Palen Creek Correctional Centre, Palen Creek, which has been declared a prison under the Corrective Services Act 2006 and the Correctional Services Regulations 2006."

The CMF Project is considered to meet the intent of the Special Purpose Zone (BSDA – Bromelton State Development Area Precinct as discussed in Section 6.3.

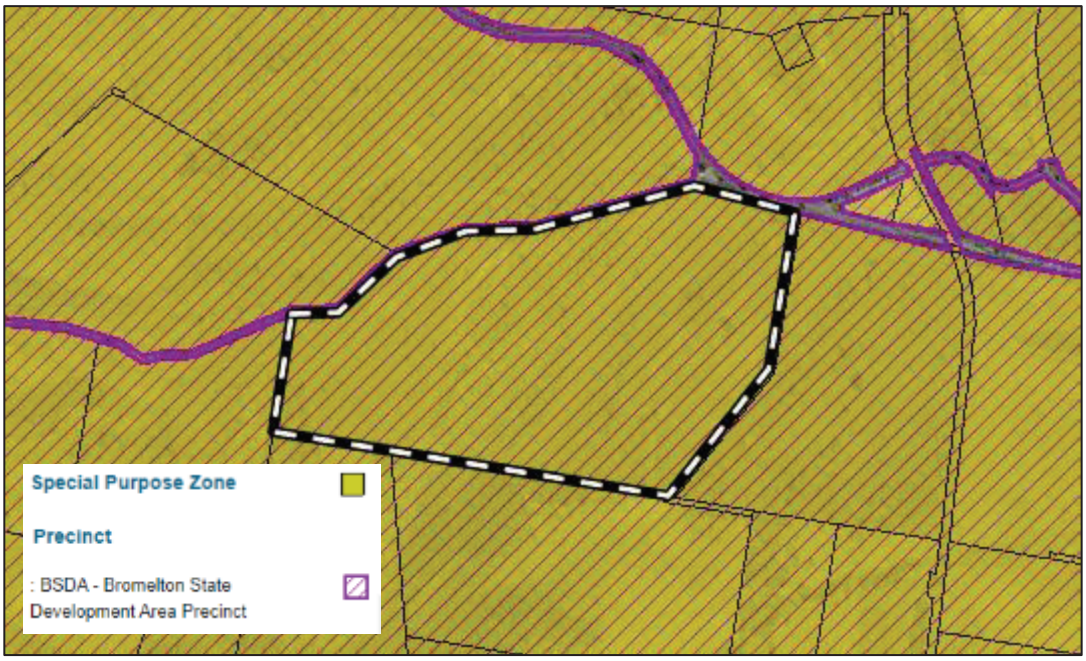


Figure 6.2 Zoning map (Source: Planning Scheme)

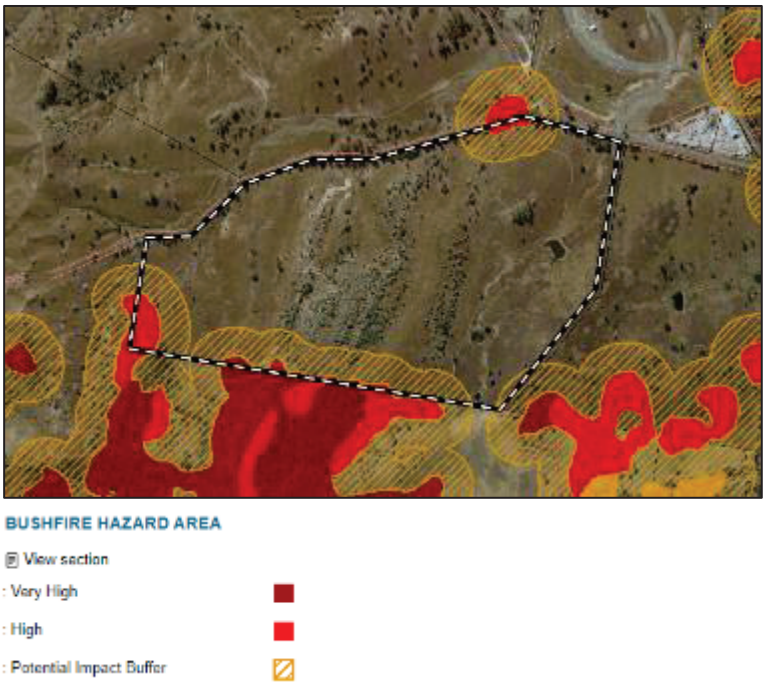
6.7.2 Local Plan

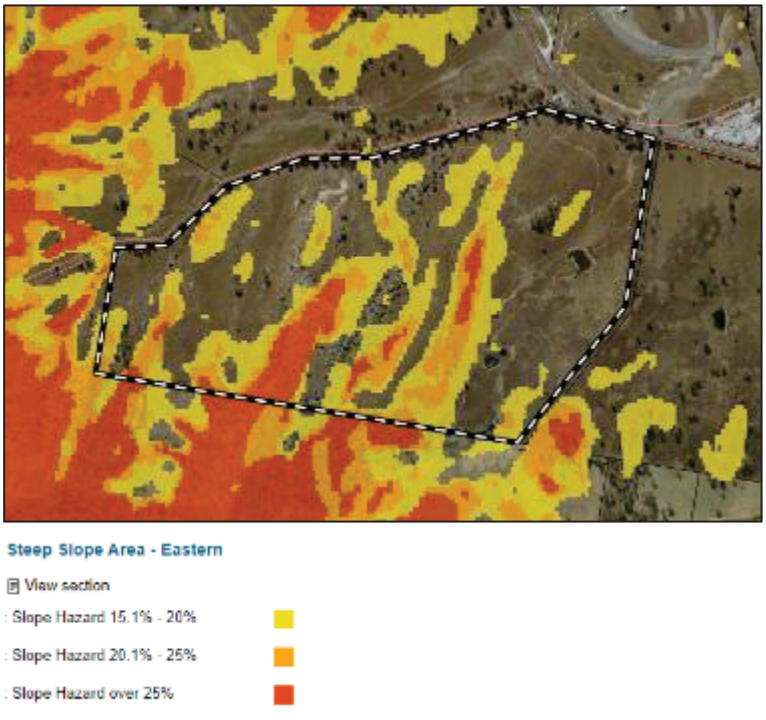
The subject site is not located within a local plan area.

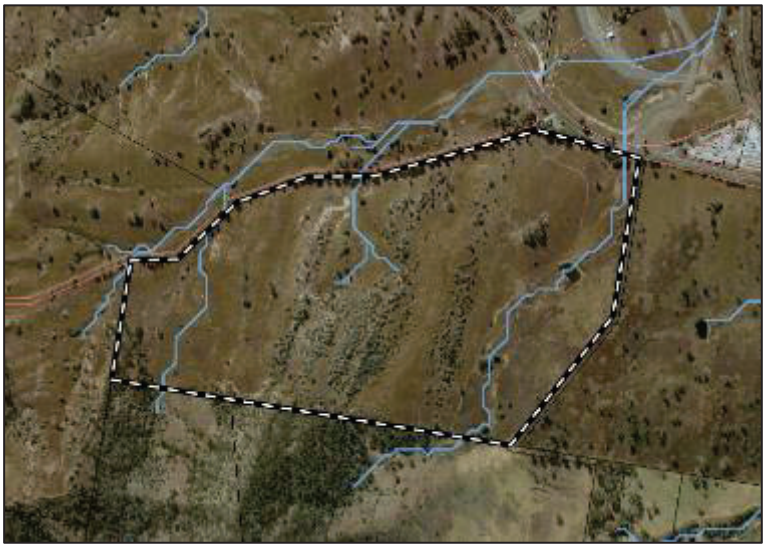
6.7.3 Overlays

The overlays relevant to the subject site under the Planning Scheme are provided in Table 6.3. The CMF Project is considered to comply with the intent of the overlay codes.

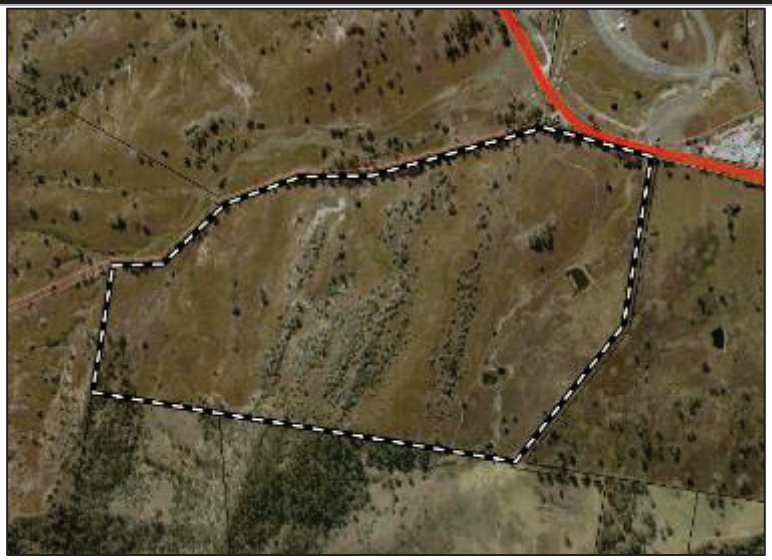
Table 6.3 Overlays relevant to the Project

Overlay mapping	Compliance with overlays
Bushfire hazard overlay  	The Project complies with the requirements listed in the 8.2.3 Code, as the majority of the development footprint is outside the Bushfire Prone Area (BPA) and consequently avoids areas of bushfire risk. Additionally, the project can be adequately separated from nearby hazardous vegetation and does not include significant changes to the vegetation hazard class adjacent to the development footprint, therefore it is not expected to increase the severity of bushfire hazard. The development footprint is on land that is largely cleared of vegetation and is not steeply sloping. Regarding the access for firefighting appliances, the proposed driveway will be constructed of a standard (including clearances) to accommodate heavy vehicle access, and it does not exceed a length of 60m. A Bushfire Management Plan (BMP) can be found in the Bushfire Hazard Assessment and Management Plan (Appendix Q), and mitigation measures have been summarised in Section 5.

Overlay mapping	Compliance with overlays
Environmental significance overlay  	The Project complies with the 8.2.4 Environmental Significance Overlay Code by ensuring that the mitigation actions summarised in Section 5 are implemented in order to protect the matters of environmental significance. The Project is proposed in an area of previously cleared land utilised for agricultural activities, with occasional trees and very low scattered regrowth. The Project area only supports cleared, ephemeral drainage lines and there are no watercourses, wetlands or permanent water sources present. A Terrestrial Ecology Assessment has been developed for the Project, concluding that five MNES have potential or are likely to occur in the project area. Additionally, one MSES has the potential to occur in the area under assessment. An Aquatic Ecology Assessment has been prepared for the Project, identifying one potential aquatic MNES and no MSES. Refer to Appendix G to access the Ecology Assessment Report, and to Section 3.4.3 and 0 for a summary of both reports. The mitigation actions developed to demonstrate that the Project is located, designed and operated to mitigate adverse impacts on the environment have been listed in Section 5.
Landslide hazard and steep slope overlay  	The subject site is undulating and slopes steeply towards the north, with site elevations ranging from 155m AHD at the southern boundary of the Project area to 100m AHD at the northern boundary. The grade of west-east undulations at the Project area is up to 24%. The Project does not materially increase the extent or severity of landslide risk, as shown in the landslide stability assessment developed for the proposed development. The assessment was based on a review of available published geological information and a walk-over survey by a geotechnical engineer. No signs of groundwater or seepage were recorded in previous investigated boreholes. The site walkover observations indicated site drainage to be generally poor to fair. Erosion was noted around the creek located north of the site. The maximum slope fall is approximately 25 - 30%. Aside from the previously noted creek bed, there were no signs of water ponding and instability noted at the site. The creek banks and areas of cut to fill should be checked by a geotechnical engineer at time of construction to verify stability to mitigate landslide risk. The proposed site also has a low landslide susceptibility rating. A landslide assessment risk assessment has been completed for the CMF (refer to Appendix S). It determined through the Landslide Susceptibility Analysis that provided that earthworks meet the relevant Australian Standards and retraining walls are checked by a geotechnical engineer then the likelihood of a failure of the existing site is a safety factor of not less than 1.5 for global instability, is unlikely and the consequence Minor, and the assessed risk is Low and acceptable. The creek banks and areas

Overlay mapping	Compliance with overlays
	of cut to fill will also need to be checked by a geotechnical engineer at time of construction to verify stability.
Water resource catchments overlay  Stream Order 1 to 3 —	The project complies with the Code 8.2.10, as mitigation actions have been developed to prevent the project increases the peak run-off volumes, as well as compromising the drinking water supply and affecting the physical integrity of natural ecosystems that contribute to maintaining healthy functioning catchments.
Transport noise corridor overlay  Mandatory Area View section Category 1 Category 2 Category 3	The project is not a sensitive land use.
Minimum lot size overlay	Not applicable as no reconfiguring of the lot is proposed as part of the project.

Overlay mapping	Compliance with overlays
 Bromelton State Development Area Industrial Precincts View section Special Industry Precinct	
Higher order roads overlay  Higher Order Roads View section Higher Order Road	As part of the project, two traffic impact assessments have been completed which determined the potential impacts and mitigations for the project. The proposed development will have access via a new crossover on Mitchell Road at the site's northern frontage. The new crossover will be designed to accommodate the largest vehicle anticipated to use the site. This location will provide approximately 800m separation to the Mitchell Road / Beaudesert-Boonah Road intersection. The Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road will be upgraded to provide for safe and efficient access to and from the site. A priority-controlled T-intersection will be provided with a Channelised Left (CHL) turn lane and short channelised right turn lane (CHR(s)) on the Beaudesert-Boonah Road approaches and a CHL turn lane on the Mitchell Road approach while Mitchell Road will be upgraded to provide a Class 4B – Rural Collector Road with two a 3.5m lane plus 0.5m sealed shoulder in each direction. SOILCO is addressing a separate approval with TMR for the intersection works. Mitchell Road will be upgraded to facilitate the access to the subject site. Scenic Rim Regional Council have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. The upgraded will accommodate B-Double traffic. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from SRRC for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network.
Road hierarchy overlay	Refer to response above.

Overlay mapping	Compliance with overlays
 Road Heirarchy View section : State Controlled Roads	

7. Stakeholder/community engagement and pre-lodgement discussions

Stakeholder and communication engagement is essential for achieving high-quality project outcomes and community and stakeholder approval and acceptance.

A sequenced, strategic approach has been adopted for the Project to provide opportunities for communities and stakeholders to participate in the Project's development and delivery. A focus on best practice public participation will enhance the project's reputation and build SOILCO's social licence to operate in the local community.

The strategic approach to communication and engagement for the project considers five elements:

– A strong narrative – Developing a narrative that is clear and promotes the project benefits.
– Sequenced briefings – The correct sequencing of stakeholder briefings is critical to ensure the right stakeholders are informed at the right time.
– Agreed messaging – Once the narrative is agreed upon, the communication messaging will be adapted to the different audiences and used consistently for communication materials and engagement activities.
– A robust engagement schedule and reporting cycle – A Communication Action Plan will be used to track upcoming activity and internal roles and responsibilities, while a regular reporting cycle will ensure lessons learned are captured immediately and changes to the engagement approach can be adopted for better outcomes.
– Effective issues management – SOILCO must prepare for potential negative community and stakeholder feedback throughout the project. Risk mitigations and an effective issues management plan are required to minimise engagement risks and protect our reputation.

As part of the project, SOILCO will undertake stakeholder engagement activities to help inform the design and delivery of the Project. The stakeholder engagement activities will be undertaken with the following parties:

– Australian Government Department:
  - Department of Climate Change, Energy, the Environment and Water (DCCEEW)
– State Government Departments:
  - Department of Transport and Main Roads (DTMR)
  - Department of Environment, Science and Innovation (DESI)
  - Department of Agriculture and Fisheries (DAF)
  - Department of Regional Development and Water (Water Services)
  - Seqwater
  - Office of the Coordinator-General (OCG)
– Scenic Rim Regional Council (Council)
– SOILCO Business Associations:
  - Bromelton Business Group
  - Beaudesert Chamber of Commerce
– Local community
– Traditional owners
– Landholders.

During the business case development phase, engagement was primarily undertaken with internal stakeholders given the challenges associated with prematurely raising expectations around an outcome.

A stakeholders engagement report has been prepared and attached in Appendix V, summarising the stakeholder engagement activities contemplated by SOILCO for this development project. Table 7.1 below identifies the key project-related stakeholders during this phase.

Table 7.1 Summary of stakeholder/community engagement and pre-lodgement discussions

Stakeholder	Engagement Type/Purpose	Method	Project team involvement	Date	Notes
Scenic Rim Regional Council (SRRC)	Overview of the project. Pre-lodgement meeting to seek advice regarding the development applications for the project.	Meeting Meeting	SOILCO ACS Engineers SRCC - Mayor, Councillors, CEO, General Managers, and the Economic Development Team.	05-Jun-2024	SOILCO presented a Project summary at SRRC Workshop. The project was well received. SRRC are looking forward to the development in the Bromelton SDA and have been supportive of the project by approving the proposed use of the Mitchell Road site.
Department of Transport and Main Roads (TMR)	Overview of the project Discussion regarding the Mitchell Road intersection	Meeting Meeting	SOILCO ACS Engineers	Since late 2023 – ongoing discussions	Several meetings have been held to discuss safe access to SOILCO site from Beaudesert Boonah Road. The application for approval is currently under review by the TMR South Coast Team.
DCCEEW	Pre-referral meeting	Meeting	SOILCO	Meeting to be organised with DCCEEW	.Meeting to be organised with DCCEEW
DESI	Pre-lodgement meeting to seek advice regarding the development applications for the Project. Pre-lodgement advice regarding the contents of the Environmental Authority application and approval.	Meeting Email	GHD	5-Jun-2024 14-Jun-2024 23-Jul-2024	**Key notes:** - OCG and DESI confirm EA applications and SDA applications are separate processes that can be run parallel to each other. - DESI notes that timeframes are generally required for each step in the compositing process and recommends SOILCO review the model conditions, particularly for odour considerations. - DESI provided information on the relevant ERAs for the Project and provided advice through email received 20-Jun-2024. - DESI provided information regarding the facility design and layout, leachate management, odour assessment and mitigation, and greenhouse gas emissions assessment through email received 23-Jul-24. - OCG and DESI confirm EA applications and SDA applications are separate processes that can be run parallel to each other. - DESI notes that timeframes are generally required for each step in the composting process and recommends SOILCO reviews the model conditions, particularly for odour considerations. The following information was sent to DESI by email:

Stakeholder	Engagement Type/Purpose	Method	Project team involvement	Date	Notes
					– Leachate management. – Facility design. – Odour Assessment. – GHG Emissions.
OCG	Pre-lodgement meeting to seek advice regarding the development applications for the project.	Meeting	OCG SOILCO ACS Engineers – GHD DESI State Development Group	05-Jun-2024	A pre-referral meeting was held with the OCG to discuss the following: - Project Overview. - Approvals process. - Technical reports/matters. - Water and groundwater. - Waste receivals. - Odour. - Program timeline. - Koala mapping. - Next steps. Key notes: - OCG requires further information to make definition between high impact industry and special impact industry. - OCG needs to consider the viability of expediting early works (bulk civil works) under an operational works approval whilst the application for a material change of use (MCU) is processed. - OCG and DESI confirm EA applications and SDA applications are separate processes that can be run parallel to each other
DAF	Pre-lodgement meeting to seek advice regarding the development applications for the Project.	Email Meeting	**GHD**	01-Jul-2024 24-Jul-2024	The following information was sent to DAF by email: - Brief overview of the project - A map with the two low risk waterways traversing the facility location - A request to declassify the mentioned waterways, based on the aquatic assessment report - A question regarding the setback distances the compost facility should have from existing moderate risk waterways. Keynote: DAF provided pre-lodgement advice through email on 24-Jul-24, confirming that while the waterway labelled ACT2 does not

Stakeholder	Engagement Type/Purpose	Method	Project team involvement	Date	Notes
					constitute a waterway under the Fisheries Act, the ACT1 does. They also provided advice on the proposed dam.
DRDMW	Pre-lodgement meeting to seek advice regarding the development of the SDA MCU development applications for the project.	Email Meeting	**GHD**	01-Jul-2024	The following information was sent to DRDMW by email: - Brief overview of the project. - A map with the facility location. - A request for unmapped water features to be classified as drainage features, based on the aquatic assessment report. - A question regarding the need of a water licence or an approval under the *Water Plan (Logan Basin) 2007* to construct a freshwater dam with overflow spillway to store uncontaminated water run-off on the site. The key notes from the response received are as follow: - The unmapped water features traversing Lot 4 RP85497 have been determined as drainage features for the purpose of the *Water Act 2000* and the relevant layers on the Queensland Globe online mapping and data tool will be updated to reflect this. Therefore, DRDMW has no requirements for an authorisation to undertake any proposed works. - No approvals under the *Water Plan (Logan Basin) 2007* are required for the proposed overland flow capture dam (the freshwater dam), and no authorisations are required to take/use water from the proposed dam under this water plan. - It is noted that a proposed bore is located at the northeast part of Lot 4 RP85497. Under the *Water Plan (Logan Basin) 2007*, no authorisations are needed to drill a water bore or to take/use water. DRDMW's only requirement is that if the bore is deeper than 6 m it must be drilled by a licenced driller. - A development permit for operational work for interfering or taking water from a watercourse is not required as the feature is not determined as a watercourse. - As the unmapped features are determined as drainage features, a riverine protection permit or compliance with riverine protection exemption requirements is not required. - Based on the above, DRDMW has no interests in the Project, and would not require a pre-lodgement meeting.
Seqwater	Pre-lodgement meeting to seek advice regarding the development of the SDA MCU development	Meeting Email	Seqwater GHD SOILCO	04-Jul-2024 17-Jul-2024	A pre-lodgement meeting was held with the Seqwater team for the Bromelton SDA to discuss the following: - Stormwater quality and potential impact on receiving waters to Seqwater's treatment plants.

Stakeholder	Engagement Type/Purpose	Method	Project team involvement	Date	Notes
	applications for the project.		ACS Engineers		- How SOILCO intends to address the critical performance outcomes in the Seqwater Development Guidelines for the Project. - Any additional technical studies required other than those identified in the soil presentation. - If Seqwater has any concerns about the design that is being proposed for the facility. - Any other documents/policies that will need to be considered for the Project. The key notes from this meeting were as follows: - Seqwater wants to understand why the western part of the site was not used (given the eastern area has more waterways). - Seqwater noted that they are specifically concerned for drinking water, rather than water quality for environment. - Seqwater noted that these drainage features were considered as watercourses per the state vegetation mapping and fish passage. Noting that they were interested in what DAF had raised for the declassification of the central waterway. - Seqwater would like to know which land use definition OCG classified for the Project. OCG will need to provide further advice to SOILCO to confirm if the proposed use is 'high impact industry' or 'special impact industry'. - Seqwater noted that a 50 m setback is preferred and if a downslope would be good to understand. Justification is needed for reduced buffers. - Seqwater was interested in the dilution factors and contamination from the site. The water quality monitoring team in Seqwater noted that they can provide some parameters (if required). Seqwater shared an email with high level advice and the following comments: - Seqwater is supportive of the zero-discharge scenario, with leachate stored in the leachate ponds and re-used in the composting process. Awaiting further details on the design capacity of the leachate ponds for weather events. - Further justification of the chosen location over the west of the site, as opposed to the relatively unconstrained eastern portion is expected.

Stakeholder	Engagement Type/Purpose	Method	Project team involvement	Date	Notes
					- The three Stream Order 1 watercourses over the development site will be considered as such in so far as the application of the Seqwater Development Guidelines and setbacks. - Seqwater do not support the original 10-15m setbacks and note the Seqwater Development Guidelines specify 100m for industrial uses to all watercourses. Awaiting confirmation from DAF on the watercourse classification, in order to inform our assessment. - A water quality monitoring plan is supported, with testing at all discharge points for the site. - Details of the groundwater monitoring plan proposed by the applicant are sought. Awaiting advice from our water quality team as to any suggested testing parameters and locations. - Although not discussed in the meeting, Seqwater will be considering leachate pond lining permeability and whether any risk is posed to groundwater. Any information the applicant can provide on the permeability and materials of the pond lining and surrounds, as well as how integrity of the lining is monitored and how repairs are undertaken, would assist. - Further information is expected on the permeability of the composting pads and to what depth - i.e. whether these are constructed of hardstand or compacted materials, also how the aerated pads work to prevent contamination of groundwater supplies - Stormwater quality management. Consideration of dust contamination of surrounding areas is relevant. - Seqwater would welcome routine provision of water quality monitoring results for the ponds, discharge points, groundwater, and they request notification of overtopping events where rainfall exceeds the leachate pond holding capacity, to warn of potential exceedances at the treatment plant. - Information on the workshop and how this will prevent contamination of surface/ground waters is requested. - Details are sought on the proposed on-site wastewater treatment and disposal facilities that will service amenities for the 20 staff. Submission of a site and soil evaluation report for on-site wastewater facilities is requested.

Stakeholder	Engagement Type/Purpose	Method	Project team involvement	Date	Notes
					- Provision of a detailed Environmental Management Plan is supported and may include much of the above information. - Seqwater welcomes any preliminary reports or revised proposal plans which would assist them to provide more detailed advice, as well as a visit to other compost facilities.
Local Community	SOILCO Developments became members of the Beaudesert Chamber of Commerce and the Bromelton Business Group.	Meeting and Newspaper article	SOILCO	26-Oct-2023	SOILCO presented the project to the Beaudesert Chamber of Commerce and a newspaper article was published to share with the community the goals of the compost manufacturing facility. Moreover, the benefits to the environment and the community were explained, as this project will reduce the amount of waste that is sent to landfills, will generate compost for agricultural use, and will create job opportunities for the local community. In March 2023, SOILCO became members of the Bromelton Business Group. The Bromelton Business Group meet quarterly to discuss topics concerning the Bromelton SDA, which has allowed SOILCO to make surrounding businesses and neighbouring landholders aware of the proposed CMF. All the Bromelton SDA landholders are members of the Bromelton Business Group, as well as SOILCO, therefore they regularly meet to discuss about different topics concerned to the Bromelton SDA. Regular engagement with the local community is intended to be maintained as the project progresses, through communication actions such as: - Regular social media posts. - Advertisement and advertorials in local Scenic Rim media outlets. - Onsite community field day at the Bromelton site
Traditional Owners	Not yet engaged	N/A	N/A	N/A	SOILCO has engaged Redleaf Group to undertake Cultural Heritage assessments and assist with engaging with indigenous leaders and custodial landowners of the project site.
Landholders	Quarterly meetings to share updates of the project with the landholders.	Regular meetings Open Day	SOILCO	Multiple times 26-Jun-2024	SOILCO has undertaken engagement activities with the relevant landholders for the project area. An open day was held at the Stott's Creek Organics Processing Facility in Tweed Heads, NSW. An informative 2-hour tour was given of the site and its operations.

8. Public notification

In accordance with the *Public Consultation Policy*, depending on the nature of a development application within an SDA, the SDA application may be required to undertake public consultation. Table 8.1 provides responses to factors the CG may have regard to in determining whether public consultation is required.

Table 8.1 Factors for consideration in requiring public consultation

Factor	Response
The age of the relevant development scheme	The Bromelton SDA Development Scheme commenced in November 2012. The latest version of the Bromelton SDA Development Scheme was approved in December 2017. This Town Planning Report has been prepared against the following additional planning legislation: – State interest review against the State Planning Policy (July 2017) – Review against the ShapingSEQ 2023 (15 December 2023) – Review against the *Scenic Rim Planning Scheme* (incorporating amendments 1-5 and 7, effective 30 June 2023). As the proposed development has been reviewed against the most up-to-date versions of relevant State and local planning legislation, the Project is considered to have regard to the current constraints and intent over the site. The proposed development is generally compliant with the relevant planning legislation.
Whether the proposed development is likely to adversely impact on sensitive receptors	Section 5 of this report identifies a number of visual, land use and ecological sensitive receptors in the surrounding area. The precinct's intent is to separate uses from residential land, sensitive and/or incompatible land uses. The proposed CMF is considered appropriately separated from these sensitive receptors. The CMF will be constructed and operated in a manner that does not adversely impact the surrounding environment. Several supporting technical reports have undertaken a comprehensive assessment of how any potential impacts can be avoided, mitigated or offset. A summary is included in the below response.
Whether the proposed development likely to adversely impact existing development within the SDA	The CMF will be constructed and operated in a manner that does not adversely impact the surrounding environment: – Traffic, transport and access – Noise and vibration – Air quality – Soil and water – Flora and fauna – Bushfire hazard – Land use, visual and socio-economic issues – Heritage – Waste and effluent – Utilities and services
Whether the proposed development is consistent with the preferred development intent for the precinct, or the purpose of the precinct (depending on the development scheme)	The subject site is located within the Special Industry Precinct of the Bromelton SDA. Assessment against the precinct's SDFA criteria has been carried out (Refer to Appendix D). High impact industry and special industry uses, which require separation from incompatible uses, are accommodated in the precinct and are generally considered to meet the precinct intent. The CMF will be constructed and operated in a manner that does not adversely impact the surrounding environment.
Whether the proposed development would be subject to public consultation under the local council's planning scheme	The subject site is mapped within the Special Purpose Zone (BSDA – Bromelton State Development Area Precinct) of the Planning Scheme. In accordance with category of assessment Table 5.5.18.1 of the Planning Scheme, an MCU for special industry is impact assessment, where not listed in the table.

Factor	Response
Whether the proposed development would be subject to public consultation if the application was made under the *Planning Act 2016*.	In accordance with Chapter 3, Part 2, Division 2, Section 53 of the *Planning Act 2016*, public notification is required if a development application requires impact assessment, or the application includes a variation request. As the proposed development would be impact assessment under the local Council's Planning Scheme, public notification would be required.

9. Conclusion

This Town Planning Assessment Report has been prepared by GHD, on behalf of SOILCO, to support a SDA application seeking a development permit from the Co-ordinator General for a MCU for special industry (CMF) located at 260 Mitchell Road, Bromelton, formally described as Lot 4 on RP85497. The SDA application has been made in accordance with Part 6, Division 1, Section 84D of the SDPWO Act.

The Bromelton CMF is to be situated in South-east Queensland at 260 Mitchell Road, Bromelton, formally known as Lot 4 on SP85497. The Bromelton CMF Project will involve the construction and operation of a facility for the receipt, processing, composting, and storage of the following materials: garden, food, wood wastes, manures and soil for the sale and distribution of finished compost, mulch and soil products. SOILCO Pty Ltd (referred to as SOILCO) will design, construct and operate the Bromelton CMF Project.

To support the operation of the Bromelton CMF, the Beaudesert-Boonah Road / Mitchell Road intersection and the 800m section of Mitchell Road will be upgraded to provide for safe and efficient access to and from the site. SOILCO is addressing a separate approval with TMR for the intersection works. In addition, Mitchell Road will be upgraded to facilitate the access to the subject site. SRRC have determined that the road is to be upgraded to a class 4B – rural collector road and this entails an 8m formation and 7m carriageway. SOILCO has secured a separate approval for constructing or interfering with a road or its operation from SRRC for the upgrade of Mitchell Road. Mitchell Road has been accepted by SRRC as a future asset in their road network.

The proposal will provide large-scale organics processing infrastructure assets to serve Queensland Councils, commercial waste generators and local communities. The CMF will be critical in assisting South-East Queensland to achieve ambitious recycling targets and counter the financial impact of rising landfill levies.

This Town Planning Assessment Report has assessed the proposal against the relevant Commonwealth, State and local planning legislation for the site. The subject site is located within the Bromelton SDA. Under the Bromelton SDA Development Scheme, the development is assessable development. The CMF is considered appropriate for the following reasons:

– The proposal complies with the intent of the relevant State interests.
– The proposal is an appropriate land use outcome outside the priority living area under the South East Queensland Regional Plan.
– The proposed development is consistent with the intent of the Bromelton SDA provisions.
– The proposal complies with the strategic intent, objectives and assessment criteria of the Development Scheme.

The CMF will be constructed and operated in a manner that avoids adverse environmental impacts on the surrounding environment. It is recommended that the OCG support the SDA application with reasonable and relevant conditions.

10. References

Department of State Development. (2017). Bromelton State Development Area Development Scheme. Available at: https://www.statedevelopment.qld.gov.au/__data/assets/pdf_file/0027/33759/bromelton-sda-development-scheme-dec-2017.pdf

GHD Pty Ltd (2024a) *Bromelton Compost Manufacturing Facility*

GHD Pty Ltd (2024b) *Appendix G Ecological Assessment – Terrestrial Ecology Assessment and Aquatic Ecology Assessment*

GHD Pty Ltd (2024c) *Bromelton Compost Manufacturing Facility. Noise Impact Assessment*

GHD Pty Ltd (2024d) *Bromelton Compost Manufacturing Facility Groundwater Assessment*

GHD Pty Ltd (2024e) *Bromelton Compost Manufacturing Facility. Stormwater Management Plan and Flood Assessment.*

GHD Pty Ltd (2024f) *Bromelton Compost Manufacturing Facility Visual Impact Assessment.*

GHD Pty Ltd (2024g) *Bromelton Compost Manufacturing Facility. Odour Impact Assessment.*

GHD Pty Ltd (2024h) *Bromelton Compost Manufacturing Facility. Environmental Management Plan.*

GHD Pty Ltd (2024h) *Bromelton Compost Manufacturing Facility. Traffic Impact Assessment.*

GHD Pty Ltd (2024h) *Bromelton Compost Manufacturing Facility. Waste Management Plan. .*

State of Queensland (2024) *Queensland Globe mapping database*, State of Queensland. Available from: https://qldglobe.information.qld.gov.au/. Accessed 20 July 2024.

State of Queensland (2023) *Development Assessment Mapping System*, State of Queensland. Available from https://spp.dsdip.esriaustraliaonline.com.au/geoviewer/map/planmaking**.** Accessed 20 July 2024.

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Appendices

Appendix A

Development Plans

Appendix B

CMF Process Flow Diagram

Appendix C

Landowner's consent

Appendix D

SDA Code Compliance

Appendix E

State Code Compliance

Appendix F

Seqwater Development Guidelines Compliance

Appendix G

Ecological Assessment – Terrestrial Ecology Assessment and Aquatic Ecology Assessment

Appendix H

Waste Management Plan

Appendix I

Traffic Impact Assessment for the Construction phase

Appendix J

Traffic Impact Assessment for the Operational phase

Appendix K

Environmental Management Plan

Appendix L

Air Quality Impact Assessment

Appendix M

Visual Impact Assessment

Appendix N

Surface Water Impact Assessment

Appendix O

Noise Impact Assessment

Appendix P

Groundwater Assessment

Appendix Q

Bushfire Hazard Assessment and Management Plan

Appendix R

Cultural Heritage Assessment

Appendix S

Slope Stability Report

Appendix T

Energy Concept Report

Appendix U

Site and Soil Evaluation Report

Appendix V

Stakeholder engagement report