DA Form 1 – Development application details

Approved form (version 1.6 effective 2 August 2024) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving only building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot)**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details.*

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008.* For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: *All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (*individual or company full name*)	Tierney Crushing & Transport Pty Ltd c/- Precinct Urban Planning
Contact name *(only applicable for companies)*	Andrew Bullen
Postal address *(P.O. Box or street address)*	PO Box 3038
Suburb	Toowoomba City
State	Queensland
Postcode	4350
Country	Australia
Contact number	(07) 4632 2535
Email address *(non-mandatory)*	andrew@precinctplan.com.au
Mobile number *(non-mandatory)*	0427 737 526
Fax number *(non-mandatory)*	
Applicant's reference number(s) *(if applicable)*	2020-219

1.1) Home-based business
☐ Personal details to remain private in accordance with section 264(6) of *Planning Act 2016*

2) Owner's consent
2.1) Is written consent of the owner required for this development application?
☒ Yes – the written consent of the owner(s) is attached to this development application ☐ No – proceed to 3)

PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

***Note**: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.*

3.1) Street address and lot on plan

☒ Street address **AND** lot on plan (a*ll lots must be listed*), ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
			Balonne Highway	Bollon
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4488	3 Emt S	MGL20 MGL52	Balonne Shire Council
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development application

☒ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:	

☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:	
Name of port authority for the lot:	

☐ In a tidal area

Name of local government for the tidal area *(if applicable)*:	
Name of port authority for tidal area *(if applicable)*	

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*	
Name of airport:	
☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*	
EMR site identification:	
☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*	
CLR site identification:	

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

☒ Yes – All easement locations, types and dimensions are included in plans submitted with this development application

☐ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

☒ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☒ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

Extractive Industry

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*

☐ Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development
☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application
☒ Not required
6.4) Is the application for State facilitated development?
☐ Yes - Has a notice of declaration been given by the Minister?
☒ No

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	☒ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☐ Yes – complete division 3
Building work	☐ Yes – complete *DA Form 2 – Building work details*

Division 1 – Material change of use

***Note**: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.*

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition *(include each definition in a new row)*	Number of dwelling units *(if applicable)*	Gross floor area (m^2) *(if applicable)*
Expansion of Extractive Industry (Pit Quarry)	Extractive Industry	N/A	N/A

8.2) Does the proposed use involve the use of existing buildings on the premises?
☐ Yes
☒ No

8.3) Does the proposed development relate to temporary accepted development under the Planning Regulation?	
☐ Yes – provide details below or include details in a schedule to this development application	
☒ No	
Provide a general description of the temporary accepted development	Specify the stated period dates under the Planning Regulation

Division 2 – Reconfiguring a lot

***Note**: This division is only required to be completed if any part of the development application involves reconfiguring a lot.*

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? *(tick all applicable boxes)*	
☐ Subdivision *(complete 10)*	☐ Dividing land into parts by agreement *(complete 11)*
☐ Boundary realignment *(complete 12)*	☐ Creating or changing an easement giving access to a lot from a constructed road *(complete 13)*

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?	
☐ Yes – provide additional details below ☐ No	
How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment			
12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m^2)	Lot on plan description	Area (m^2)
12.2) What is the reason for the boundary realignment?			

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? *(attach schedule if there are more than two easements)*				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? *(e.g. pedestrian access)*	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

***Note**: This division is only required to be completed if any part of the development application involves operational work.*

14.1) What is the nature of the operational work?		
☐ Road work	☐ Stormwater	☐ Water infrastructure
☐ Drainage work	☐ Earthworks	☐ Sewage infrastructure
☐ Landscaping	☐ Signage	☐ Clearing vegetation
☐ Other – please specify:		

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*	
☐ Yes – specify number of new lots:	
☐ No	

14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*

$

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

Balonne Shire Council

16) Has the local government agreed to apply a superseded planning scheme for this development application?

☐ Yes – a copy of the decision notice is attached to this development application
☐ The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
☒ No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have any referral requirements?
***Note**: A development application will require referral if prescribed by the* Planning Regulation 2017.

☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **Chief Executive of the *Planning Act 2016*:**

☐ Clearing native vegetation
☐ Contaminated land *(unexploded ordnance)*
☒ Environmentally relevant activities (ERA) *(only if the ERA has not been devolved to a local government)*
☐ Fisheries – aquaculture
☐ Fisheries – declared fish habitat area
☐ Fisheries – marine plants
☐ Fisheries – waterway barrier works
☐ Hazardous chemical facilities
☐ Heritage places – Queensland heritage place *(on or near a Queensland heritage place)*
☐ Infrastructure-related referrals – designated premises
☒ Infrastructure-related referrals – state transport infrastructure
☒ Infrastructure-related referrals – State transport corridor and future State transport corridor
☐ Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels
☐ Infrastructure-related referrals – near a state-controlled road intersection
☐ Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas
☐ Koala habitat in SEQ region – key resource areas
☐ Ports – Brisbane core port land – near a State transport corridor or future State transport corridor
☐ Ports – Brisbane core port land – environmentally relevant activity (ERA)
☐ Ports – Brisbane core port land – tidal works or work in a coastal management district
☐ Ports – Brisbane core port land – hazardous chemical facility
☐ Ports – Brisbane core port land – taking or interfering with water
☐ Ports – Brisbane core port land – referable dams
☐ Ports – Brisbane core port land – fisheries
☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*
☐ SEQ development area
☐ SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – community activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
☐ SEQ regional landscape and rural production area or SEQ rural living area – urban activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – combined use
☐ SEQ northern inter-urban break – tourist activity or sport and recreation activity

☐ SEQ northern inter-urban break – community activity
☐ SEQ northern inter-urban break – indoor recreation
☐ SEQ northern inter-urban break – urban activity
☐ SEQ northern inter-urban break – combined use
☐ Tidal works or works in a coastal management district
☐ Reconfiguring a lot in a coastal management district or for a canal
☐ Erosion prone area in a coastal management district
☐ Urban design
☐ Water-related development – taking or interfering with water
☐ Water-related development – removing quarry material *(from a watercourse or lake)*
☐ Water-related development – referable dams
☐ Water-related development –levees *(category 3 levees only)*
☐ Wetland protection area

Matters requiring referral to the **local government:**

☐ Airport land
☐ Environmentally relevant activities (ERA) (*only if the ERA has been devolved to local government)*
☐ Heritage places – Local heritage places

Matters requiring referral to the **Chief Executive of the distribution entity or transmission entity:**

☐ Infrastructure-related referrals – Electricity infrastructure

Matters requiring referral to:

- The **Chief Executive of the holder of the licence**, if not an individual
- The **holder of the licence**, if the holder of the licence is an individual

☐ Infrastructure-related referrals – Oil and gas infrastructure

Matters requiring referral to the **Brisbane City Council:**

☐ Ports – Brisbane core port land

Matters requiring referral to the **Minister responsible for administering the *Transport Infrastructure Act 1994*:**

☐ Ports – Brisbane core port land *(where inconsistent with the Brisbane port LUP for transport reasons)*
☐ Ports – Strategic port land

Matters requiring referral to the **relevant port operator**, if applicant is not port operator**:**

☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*

Matters requiring referral to the **Chief Executive of the relevant port authority:**

☐ Ports – Land within limits of another port *(below high-water mark)*

Matters requiring referral to the **Gold Coast Waterways Authority:**

☐ Tidal works or work in a coastal management district *(in Gold Coast waters)*

Matters requiring referral to the **Queensland Fire and Emergency Service:**

☐ Tidal works or work in a coastal management district *(involving a marina (more than six vessel berths))*

18) Has any referral agency provided a referral response for this development application?

☐ Yes – referral response(s) received and listed below are attached to this development application
☒ No

Referral requirement	Referral agency	Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application *(if applicable).*

PART 6 – INFORMATION REQUEST

19) Information request under the DA Rules

☒ I agree to receive an information request if determined necessary for this development application

☐ I do not agree to accept an information request for this development application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties*
- *Part 3 under Chapter 1 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules or*
- *Part 2under Chapter 2 of the DA Rules will still apply if the application is for state facilitated development*

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? *(e.g. a preliminary approval)*

☒ Yes – provide details below or include details in a schedule to this development application

☐ No

List of approval/development application references	Reference number	Date	Assessment manager
☒ Approval ☐ Development application	EA: EPPR01645113		DESI
☐ Approval ☐ Development application			

21) Has the portable long service leave levy been paid? *(only applicable to development applications involving building work or operational work)*

☐ Yes – a copy of the receipted QLeave form is attached to this development application

☐ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid

☒ Not applicable *(e.g. building and construction work is less than $150,000 excluding GST)*

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

☐ Yes – show cause or enforcement notice is attached

☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

☒ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below

☐ No

***Note**: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.*

Proposed ERA number:	No.16	Proposed ERA threshold:	2(b) and 3(b)
Proposed ERA name:	Extractive and Screening Activities		

☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

☐ Yes – *Form 536: Notification of a facility exceeding 10% of schedule 15 threshold* is attached to this development application

☒ No

***Note**: See www.business.qld.gov.au for further information about hazardous chemical notifications.*

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☐ Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☒ No

***Note**: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.*

2. See https://www.qld.gov.au/environment/land/vegetation/applying for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

***Note**: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.*

Koala habitat in SEQ Region

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work which is assessable development under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes – the development application involves premises in the koala habitat area in the koala priority area

☐ Yes – the development application involves premises in the koala habitat area outside the koala priority area

☒ No

***Note**: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.desi.qld.gov.au for further information.*

Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the *Water Act 2000***?

☐ Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development

☒ No

***Note**: Contact the Department of Resources at www.resources.qld.gov.au for further information.*

*DA templates are available from planning.statedevelopment.qld.gov.au**.** If the development application involves:*

- *Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1*
- *Taking or interfering with water in a watercourse, lake or spring: complete DA Form1 Template 2*
- *Taking overland flow water: complete DA Form 1 Template 3.*

Waterway barrier works

23.7) Does this application involve **waterway barrier works?**

☐ Yes – the relevant template is completed and attached to this development application

☒ No

DA templates are available from planning.statedevelopment.qld.gov.au. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

☐ Yes – an associated *resource* allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

***Note**: See guidance materials at www.daf.qld.gov.au for further information.*

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

☒ No

***Note**: Contact the Department of Resources at www.resources.qld.gov.au and www.business.qld.gov.au for further information.*

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

☒ No

***Note**: Contact the Department of Environment, Science and Innovation at www.desi.qld.gov.au for further information.*

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application

☒ No

***Note**: See guidance materials at www.resources.qld.gov.au for further information.*

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district**?

☐ Yes – the following is included with this development application:
- ☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work *(only required if application involves prescribed tidal work)*
- ☐ A certificate of title

☒ No

***Note**: See guidance materials at www.desi.qld.gov.au for further information.*

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

☐ Yes – details of the heritage place are provided in the table below

☒ No

***Note**: See guidance materials at www.desi.qld.gov.au for information requirements regarding development of Queensland heritage places.*

For a heritage place that has cultural heritage significance as a local heritage place and a Queensland heritage place, provisions are in place under the Planning Act 2016 that limit a local categorising instrument from including an assessment benchmark about the effect or impact of, development on the stated cultural heritage significance of that place. See guidance materials at www.planning.statedevelopment.qldgov.au for information regarding assessment of Queensland heritage places.

Name of the heritage place:		Place ID:	

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.14) Does this development application involve new or changed access to a state-controlled road?

☐ Yes – this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)

☒ No

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.15) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

☐ Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered

☒ No

***Note**: See guidance materials at www.planning.statedevelopment.qld.gov.au for further information.*

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 ***Note**: See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *DA Form 2 – Building work details* have been completed and attached to this development application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is with the development application ***Note**: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued *(see 21)*	☐ Yes ☒ Not applicable

25) Applicant declaration
☒ By making this development application, I declare that all information in this development application is true and correct ☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001* ***Note**: It is unlawful to intentionally provide false or misleading information.*
Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website. Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where: • such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or • required by other legislation (including the *Right to Information Act 2009*); or • otherwise required by law. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002.*

PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: | Reference number(s):

Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment *Note: For completion by assessment manager if applicable*			
Description of the work			
QLeave project number			
Amount paid ($)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

precinct
URBAN PLANNING

DEVELOPMENT APPLICATION

Development Permit – Material Change of Use
Development Permit – Environmentally Relevant Activities

Extractive Industry

"Rockville"
Balonne Highway, Bollon

PLANNING REPORT

JANUARY 2025

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URBAN PLANNING

DEVELOPMENT APPLICATION

Development Permit – Material Change of Use
Development Permit – Environmentally Relevant Activities

Extractive Industry

"Rockville"
Balonne Highway, Bollon

Lot 3 MGL20 inc. Emt S MGL52

PREPARED FOR: Tierney Crushing and Transport Pty Ltd

JANUARY 2025

TABLE OF CONTENTS

EXECUTIVE SUMMARY

SITE DETAILS

Address of Site	"Rockville" Balonne Highway, Bollon
Real Property Description	Lot 3 on MGL20 inc. Emt S MGL52
Area of Site	4,849.146 hectares
Planning Area/Zone	Rural Zone
Owners	Pastoral Partners Australia Trusco Pty Limited

ASPECTS OF DEVELOPMENT

Type of Development	**Development Permit**
Material Change of Use – "Extractive Industry" (Pit Quarry)	Impact Assessment
Environmentally Relevant Activity (ERA) No.16 (2)(b) & 16(3)(b)	Code Assessment

APPLICANT DETAILS

Applicant	Tierney Crushing and Transport Pty Ltd c/- Precinct Urban Planning PO Box 3038 TOOWOOMBA QLD 4350
Contact Person	**Andrew Bullen** **Phone:** (07) 4632 2535 **Mobile:** 0427 737 526 **Email:** andrew@precinctplan.com.au
Our Reference	2020-219

PROPOSAL

OVERALL DEVELOPMENT CONCEPT

This combined development application seeks Development Permits for the following quarry activities on the subject land at "Rockville", Balonne Highway, Bollon:

- Material Change of Use for "Extractive Industry" (Pit Quarry); and
- Environmentally Relevant Activity (ERA) No. 16(2)(b) and 16(3)(b) for extraction and screening activities of between 100,000 tonnes – 1,000,000 tonnes of material per annum.

MATERIAL CHANGE OF USE

This component of the development application seeks approval for a Development Permit for a Material Change of Use for an expansion of an existing "Extractive Industry" on the subject site. The proposed expansion seeks to allow the extraction and screening of quarry material within the threshold of 100,000t - 1,000,000t of material per annum. Outside of the area of the existing quarry, the subject land is currently vacant, free of buildings and structures and utilised for non-intensive agricultural purposes.

The existing quarry on the site has historically been utilised for flood damage recovery on the Ballone Highway and involved extraction, screening and crushing of up to 100,000t of material a year. The existing quarry has a total footprint of approximately 18.6ha.

The proposed development will involve expansion of the existing quarry operations, and is intended to extract quarry material that will primarily be used for road construction and maintenance, and construction purposes. Current extraction is situated on the southern side of the Balonne Highway and is proposed to be expanded with a total footprint of approximately 81 hectares. The proposed extractive works area is currently covered with grass and scattered trees.

On average, the quarry is expected to have a predicted annual throughput of material of up to 300,000t.

The site layout makes provision for an extraction pit, stockpile pads, site office / diesel storage area, 3 x sediment basins, and a detention basin. It is noted that diesel storage will be limited to a 10,000L self-bunded, above ground tank. Site activities will generally include blasting, extracting, crushing, screening and washing of gravel on site. Blasting will be undertaken approximately three (3) times per year.

The development will utilise the existing access to the Balonne Highway, which has a current configuration suitable to cater for the proposed quarry expansion.

A total of three (3) staff members will be employed on the site at any time and these will include those engaged in extraction and screening activities. A supervisor will be always on-site when extraction is occurring.

Extraction, crushing and screening activities and internal haulage are proposed to between 5.30am and 6.00pm, 7 days per week (excluding public holidays). Haulage trucks will access to site from 5:00am to 10:00pm, 7 days per week (excluding public holidays).

Drilling activities will be limited to 7:00am to 6:00pm 7 days per week, while blasting operations will be further limited to 9:00am to 3:00pm, Monday to Friday, and between 9:00am to 1:00pm on Saturdays.

ENVIRONMENTALLY RELEVANT ACTIVITY

The proposed development will also seek separate approval for an Environmentally Relevant Activity (ERA) No. 16 (2)(b) and (3)(b) - Extractive and Screening Activities - between 100,000 tonnes and 1,000,000 tonnes of material per annum.

Under the *Environmental Protection Regulation 2019,* an Environmentally Relevant Activity Nos. 16 (2)(b) and 16 (3)(b) are classified as a 'Concurrence ERAs'.

A development permit is required to be obtained for a Concurrence ERA with a consequential referral obligation to the Department of Environment and Science and Innovation (DESI).

It is noted that approval for the Environmentally Relevant Activities will be obtained via an Environmental Authority amendment application for EA Permit No. EPPR01645113.

DETAILS OF THE APPLICATION

Proposal	"Extractive Industry" (Pit Quarry)
Environmentally Relevant Activity (ERA)	ERA Nos. 16(2)(b) and 16(3)(b)
Extraction Volumes	An average of 300,000 tonnes per annum
Staff	3 staff
Operation Hours	Extraction, crushing, screening activities and internal haulage: 5.30am and 6.00pm, 7 days per week (excluding public holidays). Haulage: 5:00am to 10:00pm, 7 days per week (excluding public holidays). Drilling: 7:00am to 6:00pm 7 days per week. Blasting: 9:00am to 3:00pm, Monday to Friday, 9:00am to 1:00pm on Saturdays.
Parking Provision	Allocated on-site car parking area
Vehicular Access	Balonne Highway

1.0 INTRODUCTION

This report has been prepared in support of a combined development application for Development Permits for: (i) Material Change of Use for an expansion to an existing "Extractive Industry" (Pit Quarry) and (ii) Environmentally Relevant Activities No. 16 (2)(b) and (3)(b) – Extracting and screening activities between 100,000 and 1,000,000 tonnes/annum, on land at "Rockville", Balonne Highway, Bollon, being that land described as Lot 3 on MGL20 including Easement S MGL52. The proposal involves an increase in the scale and intensity of an existing use of premises and accordingly comprises a Material Change of Use pursuant to the *Planning Act 2016*.

This town planning report addresses the merits of the development having regard to the provisions of the *Planning Act 2016* and the *Balonne Shire Planning Scheme 2024*. This planning report has been prepared on behalf of the applicant, Tierney Crushing and Transport Pty Ltd.

The combined application for Development Permits for a Material Change of Use and Environmentally Relevant Activities No.16 (2)(b) and (3)(b) is assessable development subject to impact assessment. The following report demonstrates the suitability of the proposal within the locality and its compliance with the relevant provisions of the *Balonne Shire Planning Scheme 2024*.

2.0 SITE AND LOCALITY

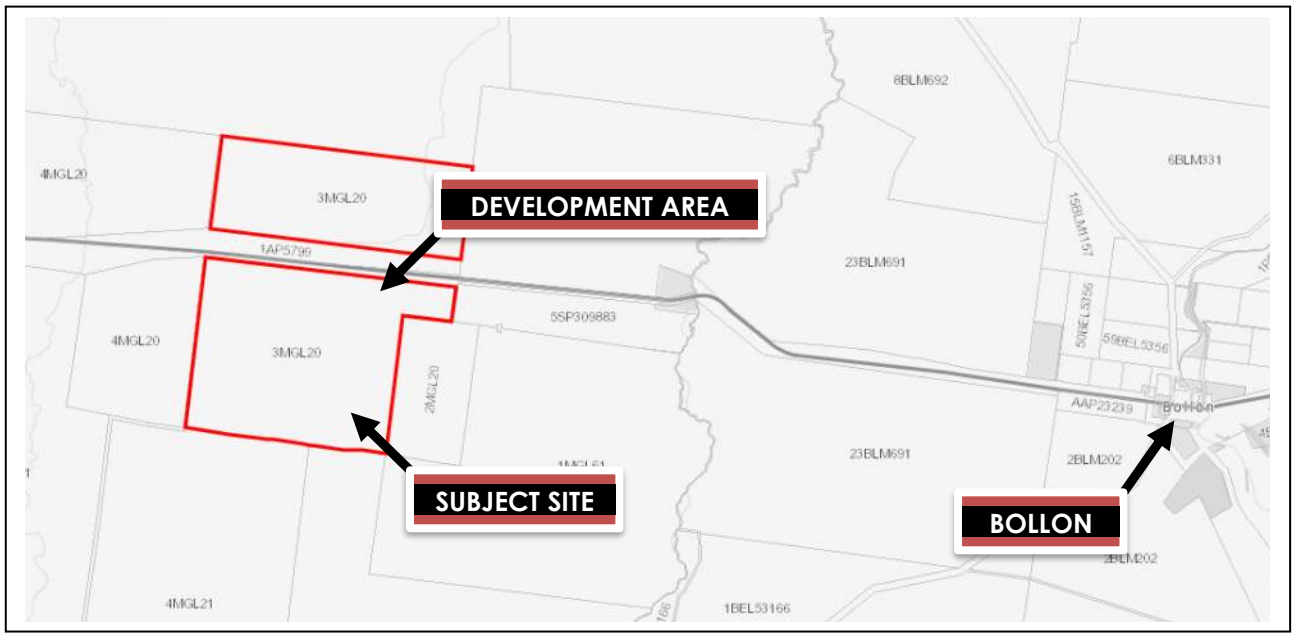
2.1 SUBJECT SITE

The subject site is located on the Balonne Highway, Bollon, being that land described as Lot 3 on MGL20 including Easement S MGL52. The site is situated approximately 21km west of Bollon and 148km east of Cunnamulla. The location of the subject site is illustrated in **Figure 1**.

The subject site is generally of rectangular configuration and comprises a single title which is dissected by the Balonne Highway. The site has an area of 4,849.146 hectares and has frontages to the Balonne Highway. The subject site is illustrated in **Figure 2**.

FIGURE 1 - LOCALITY PLAN

FIGURE 2 - SITE PLAN



The subject site is currently utilised by Tierney Crushing and Transport Pty Ltd for an existing Extractive Industry use. The features of the subject site, including the existing gravel pit, and surrounding land uses are illustrated in **Photographs 1 and 2**.

PHOTOGRAPH 1: Aerial view of the subject site (bordered in white) and surrounding land uses.

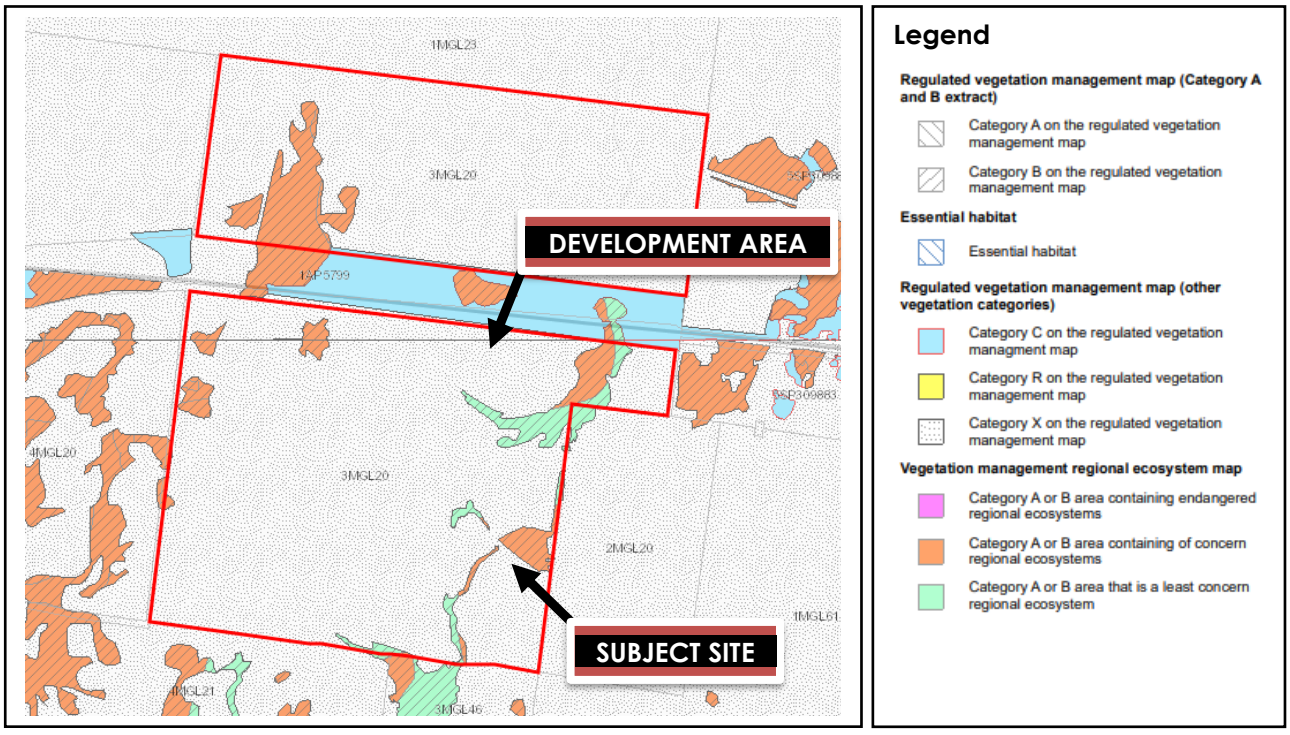
PHOTOGRAPH 2: Aerial view of development site and the Balonne Highway to the north.

2.2 SITE CHARACTERISTICS

The site is characterised by the following features:

- The subject site has primary frontage to, and is dissected by, the Balonne Highway, which is identified as a State-controlled road. The Balonne Highway is a two-lane, marked, bitumen sealed carriage way with grass drainage swales on either side of the carriageway.
- The subject site is vacant and contains an existing Extractive Industry use.
- Lands in the locality drain in a southerly direction towards the Culgoa River located approximately 85km south of the site.
- The subject site experiences a decline in land elevation between the Balonne Highway frontages and the northern and southern boundaries of the site. The site has a maximum elevation above the 200m AHD contour adjacent to the proposed quarry site.
- The subject site contains Category B remnant vegetation that is identified as "of concern" and "least concern" regional ecosystem; refer the **Figure 3**. It is noted that the development site will be located entirely within an area identified as Category X.
- The subject site is serviced by telecommunications and electricity infrastructure networks. The land is not serviced by reticulated water supply or sewerage networks, and instead relies on rainwater and groundwater harvesting and on-site effluent disposal systems.
- The subject site contains Easement S MGL52 which burdens the subject site in favour of Santos Resources Pty Ltd for gas pipeline purposes. It is noted that this easement is located approximately 600m to the south of the existing quarry and is not in proximity to the proposed development site area.

FIGURE 3 - REMNANT VEGETATION MAPPING



The features of the subject site are illustrated in **Photographs 3 - 5**.

PHOTOGRAPH 3: View of the subject site looking south from the Balonne Highway frontage. This photograph also illustrates the existing access from the Balonne Highway to the subject land.

PHOTOGRAPH 4: View of the subject site from the site entrance.

PHOTOGRAPH 5: View of the existing quarry located on the subject site.

2.3 SURROUNDING LAND USE

2.3.1 SURROUNDING LOCALITY

The subject site is situated within the rural locality of Bollon, approximately 21km west of the Bollon township and 148km east of Cunnamulla. The surrounding locality predominately consists of rural land utilised for various agricultural, grazing and associated non-intensive animal industry uses.

2.3.2 ADJOINING PROPERTIES

The prevailing pattern of land use on surrounding properties may be summarised as follows:

- Land to the **north** of the development site, opposite the Balonne Highway, comprises vacant rural land utilised primarily for grazing purposes.
- Land to the **east** of the subject site, opposite an unnamed road reserve, comprises vacant rural land utilise primarily for grazing purposes.
- Land to the **south** of the development site comprises vacant rural land utilised primarily for grazing purposes.
- Land to the **west** of the subject site, opposite Jhelum Plains Road, is a rural premises consisting of a dwelling house and structures ancillary to rural use of the premises.

Refer to **Photograph 1** which provides an aerial view of the surrounding rural properties.

2.3.3 LOCATION OF NEAREST RECEPTORS

The location of the nearest receptors on adjoining land is illustrated on the Sensitive Receptors Plan, Project No. J001483, dated 21 September 2023, prepared by Range Environmental Consultants and included within the Environmental Assessment attached at **Appendix E** with an extract provided in **Figure 4 – Location of Nearest Receptors.**

The nearest sensitive receptor to the development is located approximately 6.6km north-east of the development site area.

The assessment of the potential odour, noise and dust impacts of the development on nearby receptors provided in the Environmental Assessment, prepared by Range Environmental, confirms there is not expected to be any adverse off-site amenity impacts generated by the development on nearby sensitive receptors; refer to **Appendix E**.

FIGURE 4 - LOCATION OF NEAREST RECEPTORS

3.0 PROPOSAL

3.1 OVERALL DEVELOPMENT CONCEPT

This combined development application seeks Development Permits for the following quarry activities on the subject land at "Rockville", Balonne Highway, Bollon:

- Material Change of Use for "Extractive Industry" (Pit Quarry); (Refer to section 3.2); and
- Environmentally Relevant Activities (ERA) No. 16 2(b) and 16(3)(b) for extraction and screening activities of between 100,000 tonnes – 1,000,000 tonnes of material per annum (Refer section 3.3).

3.2 MATERIAL CHANGE OF USE

This component of the development application seeks approval for a Development Permit for a Material Change of Use for an expansion of an existing "Extractive Industry" on the subject site. The proposed expansion seeks to allow the extraction and screening of quarry material within the threshold of 100,000t - 1,000,000t of material per annum. Outside of the area of the existing quarry, the subject land is currently vacant, free of buildings and structures and utilised for non-intensive agricultural purposes.

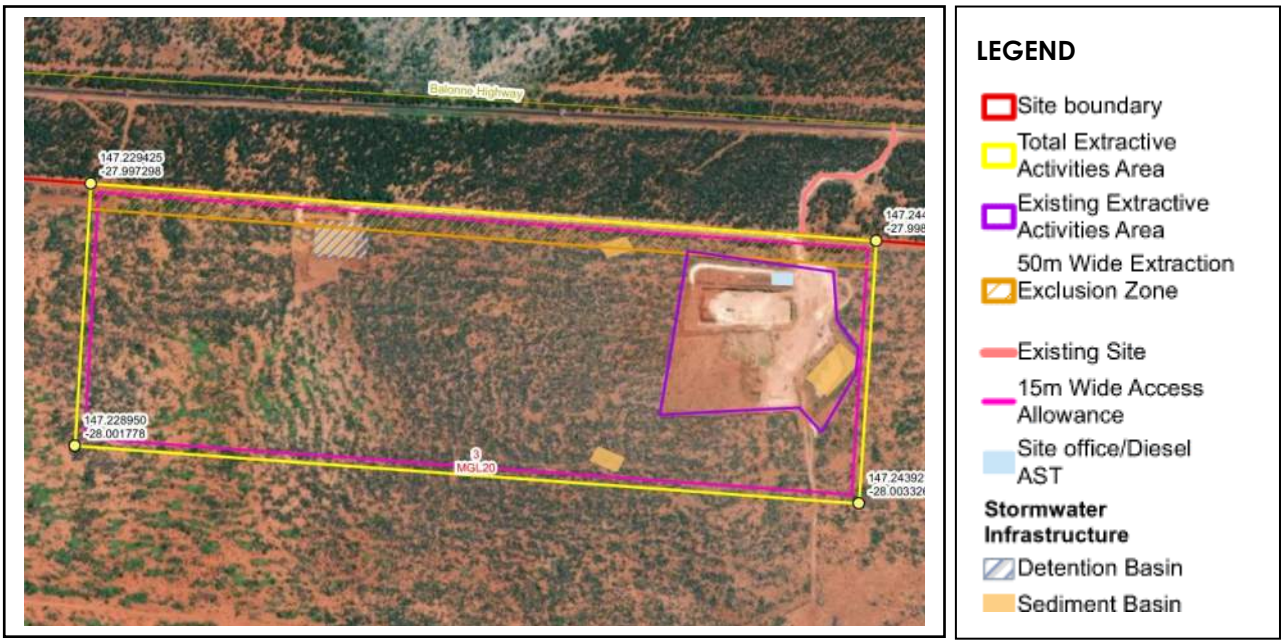
The existing quarry on the site has historically been utilised for flood damage recovery on the Ballone Highway and involved extraction, screening and crushing of up to 100,000t of material a year. The existing quarry has a total footprint of approximately 18.6ha. The existing quarry benefits from ERAs 16(2)(a) and 16(3)(a) for extraction and screening activities of between 5,000 – 100,000t of material in a year, however it is understood that a Development Permit for Material Change of Use was not required due to the use commencing under the flood recovery emergency provisions of the *Planning Act 2016*.

The proposed development will involve expansion of the existing quarry operations, and is intended to extract material that will primarily be used for road construction and maintenance, and construction purposes. Current extraction is situated on the southern side of the Balonne Highway and is proposed to be expanded with a total footprint of approximately 81 hectares. The proposed extractive works area is currently covered with grass and scattered trees.

It is noted that there are limited quarries in the region that can supply the required type and mix of materials capable of meeting Austroads specifications for road sub-base and pavement construction. The available resource deposits on the subject land are sizeable, but ultimately scarce in the surrounding region. Accordingly, while the ultimate duration of extraction and extraction activities on the site is unable to be estimated, production is proposed to increase to respond to growing demand. On average, the quarry is expected to have a predicted annual throughput of material of up to 300,000t. This increase in extraction necessitates the concurrent approval of ERA 16 (2)(b) and 16(3)(b) permitting extraction and screening of materials within the threshold of 100,000 – 1,000,000 tonnes per year; refer section 3.3.

The proposed layout and design of the development will be generally in accordance with the Total Extractive Activities Area, Project No. J001483, dated 22 February 2024, prepared by Range Environmental, attached at **Appendix D** and reproduced below as **Figure 5**.

FIGURE 5 - EXTRACT OF PROPOSED SITE PLAN



The site layout makes provision for an extraction pit, stockpile pads, site office / diesel storage area, 3 x sediment basins, and a detention basin. It is noted that diesel storage will be limited to a 10,000L self-bunded, above ground tank.

Site activities will generally include blasting, extracting, crushing, screening and washing of gravel on site. Blasting will be undertaken approximately three (3) times per year.

A detailed Environmental Assessment Report has been prepared by Range Environmental and is attached as **Appendix E.** The Environmental Assessment Report addresses the potential environmental impacts and management practices that will be implemented in association with constructing and operating the proposed quarry expansion. It is noted that a the Environmental Assessment Report also includes an Environmental Risk Assessment, which addresses the potential for environmental risks including amenity impacts relating to noise, air, greenhouse gas and light emissions. The Environmental Risk Assessment notes that the proposed development is unlikely to have adverse amenity impacts given the nearest sensitive receptor is located approximately 6.6km from the subject site.

Environmental monitoring and management programs and progressive rehabilitation of extraction areas is proposed to occur in accordance with the Site Based Management Plan prepared by Range Environmental and attached as **Appendix F**.

A Stormwater Management Plan has been prepared for the proposed development by RMA Engineers and is attached as **Appendix G.** The Stormwater Management Plan has been prepared to address stormwater quantity and quality provisions, and ensures stormwater runoff is managed to ensure no worsening to downstream properties or the State-controlled road network.

The traffic attributes of the extractive industry and projected impacts on the State Controlled and Local Road networks have been assessed under the Traffic Impact Assessment prepared by RMA Engineers Pty Ltd which is attached as **Appendix H**. It is noted that the development will utilise the existing access to the Balonne Highway, which has a current configuration suitable to cater for the proposed quarry expansion.

A total of three (3) staff members will be employed on the site at any time and these will include those engaged in extraction and screening activities. A supervisor will be always on-site when extraction is occurring.

Extraction, crushing and screening activities and internal haulage are proposed to between 5.30am and 6.00pm, 7 days per week (excluding public holidays). Haulage trucks will access to site from 5:00am to 10:00pm, 7 days per week (excluding public holidays).

Drilling activities will be limited to 7:00am to 6:00pm 7 days per week, while blasting operations will be further limited to 9:00am to 3:00pm, Monday to Friday, and between 9:00am to 1:00pm on Saturdays.

3.3 ENVIRONMENTALLY RELEVANT ACTIVITY

The proposed development will also seek separate approval for an Environmentally Relevant Activity (ERA) No. 16 (2)(b) and (3)(b) - Extractive and Screening Activities - between 100,000 tonnes and 1,000,000 tonnes of material per annum.

Under the *Environmental Protection Regulation 2019,* an Environmentally Relevant Activity Nos. 16 (2)(b) and 16 (3)(b) are classified as a 'Concurrence ERAs'.

An Environmental Authority is required to be obtained for a Concurrence ERA via referral of the development application to the Department of Environment and Science and Innovation (DESI).

It is noted that approval for the Environmentally Relevant Activities will be obtained via an Environmental Authority amendment application for EA Permit No. EPPR01645113; refer to the Environmental Assessment Report has been prepared by Range Environmental and attached as **Appendix E.**

4.0 PLANNING FRAMEWORK

4.1 THE PLANNING ACT 2016

The purpose of the *Planning Act 2016* (PA) is to establish an efficient, effective, transparent, integrated, coordinated, and accountable system of land use planning (planning), development assessment and related matters that facilitates the achievement of ecological sustainability.

The proposal comprises a material change of use as it involves an increase in the scale and intensity of an existing use of premises. A Development Permit must be obtained to authorise the lawful expansion and intensification of the use. Assessment against the *Balonne Shire Planning Scheme 2024* indicates that the proposal is subject to impact assessment in accordance with Section 45(5) of the *Planning Act 2016.*

4.2 STATE PLANNING POLICY

Pursuant to the provisions of section 45(5) of the *Planning Act 2016*, the Assessment Manager, in considering an application subject to impact assessment, must assess the application in respect of the State Planning Policy. The proposal has been briefly considered in respect of the current State Planning Policy as follows:

STATE PLANNING POLICY (JULY 2017)

The State Planning Policy July 2017 (SPP) commenced on 3 July 2017 and replaces State Planning Policy April 2016. The SPP expresses the state's interests in land use planning and development and promotes these interests through plan making and development decisions of state and local government. The SPP applies, to the extent relevant, when:

- making or amending a local planning instrument;
- designating premises for infrastructure;
- making or amending a regional plan;
- development assessment by local government, if its planning scheme has not yet appropriately integrated the relevant SPP state interests' policies; and
- an assessment manager or referral agency other than local government is assessing a development application.

The SPP addresses seventeen (17) state interests categorised under the following themes:

(i) Liveable communities and housing.
(ii) Economic growth.
(iii) Environment and heritage.
(iv) Safety and Resilience to Hazards.
(v) Infrastructure.

A state interest is defined under Schedule 2 of the *Planning Act 2016* (the Act):

(a) an interest that the Minister considers affects an economic or environmental interest of the State or a part of the State; or

(b) an interest that the Minister considers affects the interest of ensuring this Act's purpose is achieved.

The proposed development has been assessed against the state interests included under *Part E: State Interest Policies and Assessment Benchmarks* of the SPP as follows:

STATE INTEREST POLICIES AND ASSESSMENT BENCHMARKS

The Part E of the SPP contains state interest policies and where relevant, the assessment benchmarks for each state interest. The assessment benchmarks for each relevant state interest are listed below. For each of these state interests, Part E of the SPP advises when the assessment benchmarks apply and if so, what matters the application must be assessed against, to the extent the SPP has not been identified in a local planning instrument as being appropriately integrated.

1. Liveable Communities

These provisions apply to a development application in an urban area involving premises that is, or will be, accessed by common private title, for a material change of use or reconfiguring a lot where the application involves buildings (attached or detached) that are not covered by other legislation or planning provisions mandating fire hydrants.

Where these circumstances apply, the development:

(i) ensures fire hydrants are installed and located to enable fire services to access water safely, effectively and efficiently;

(ii) road widths, and construction within the development, are adequate for fire emergency vehicles to gain access to a safe working area close to buildings and near water supplies whether or not on-street parking spaces are occupied; and

(iii) fire hydrants are suitably identified so that fire services can locate them at all hours.

In this instance the development application does not involve any of the above circumstances and accordingly, the provisions are not relevant to the assessment of the application.

2. Mining and Extractive Resources

The proposed development does not trigger assessment against the mining and extractive resources state interest provisions as it does not involve: (i) reconfiguring a lot within a key resource area (KRA), or (ii) a material change of use within a resource/processing area of a KRA or the separation area for the resource/processing area of a KRA, or (iii) a material change of use within a transport route separation area of a KRA that will result in an increase in the number or people working or residing in the transport route separation area.

3. Water Quality

These provisions relate to the following matters of state interest:

(1) Receiving waters - including development applications for:
- (a) a material change of use for urban purposes that involves a land area of 2,500m² or greater that will result in:
  - (i) an impervious area greater than 25% of the net developable area; or
  - (ii) six or more dwellings; or
- (b) reconfiguring a lot for urban purposes that involves a land area 2,500m² or greater and will result in six or more lots; or
- (c) operational works for urban purposes that disturb 2,500m² or greater of land area.

(2) For water supply buffer areas – a development application located wholly outside an urban area and relating to premises that is within, or partly within, a water supply buffer area, that involves: (i) material change of use activities listed in Part E of the SPP, or (ii) reconfiguring a lot to create five or more additional lots where one or more lots are less than 16ha and any of the created lots rely on on-site wastewater treatment.

In this instance, the development application does not involve any of the above circumstances and accordingly, the provisions are not relevant to the assessment of the application. A Stormwater Management Plan has been prepared by RMA Engineers and is attached at **Appendix G**. This report confirms that the proposed development will comply with the relevant provisions for stormwater quality and quantity. Accordingly, the proposed development will not adversely affect matters associated with this State interest.

4. Natural Hazards, Risk and Resilience

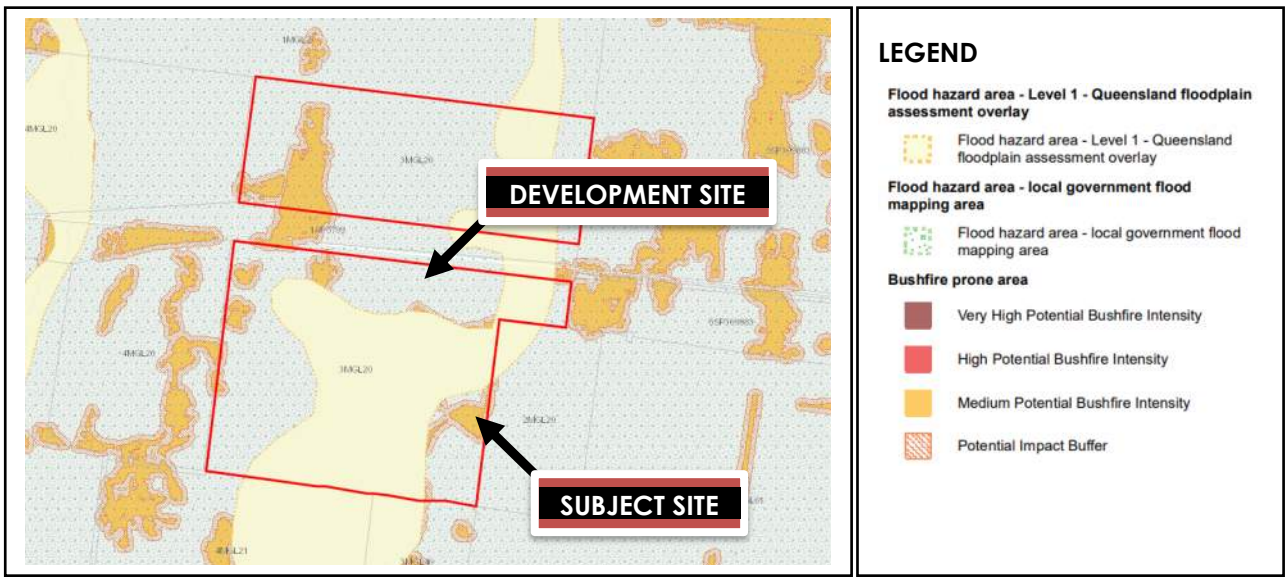
These provisions relate to development applications for a material change of use, reconfiguring a lot or operational work on land within: (i) a flood hazard area; (ii) a bushfire hazard area; (iii) a landslide hazard area, (iv) storm tide inundation areas; and (v) erosion prone area.

In this instance the development application does not involve any of the above circumstances and accordingly, the provisions are not relevant to the assessment of the application.

The subject site is identified as containing Flood Hazard Areas – Local Government Flood Mapping Area and Level 1 – Queensland Flood Plain Assessment Overlay, and Bushfire Prone Areas – Potential Impact Buffer and Medium Potential Bushfire Intensity. However, the development site area only contains Flood Hazard Area – Local Government Flood Mapping Area on the State Planning Policy Mapping; refer to **Figure 6**.

It is relevant to note that the proposed extraction use is not sensitive to bushfire impacts, and any buildings/structures associated with the proposed use are located entirely outside of areas identified as potential bushfire hazard. The *Balonne Shire Planning Scheme 2024* addresses local government flood hazard considerations under the Flood Hazard Overlay Code. An assessment against this code is provided at section 4.7. Accordingly, the development will not adversely affect matters associated with this state interest.

FIGURE 6 - STATE PLANNING POLICY MAPPING



5. Strategic Airports and Aviation Facilities

These provisions relate to development applications that involve land located within a local government area that contains/impacted by a strategic airport identified in the SPP Part E, Table 2, or an aviation facility identified in Appendix 2 of the *strategic airports and aviation facilities guidance material* and involve:

(i) a material change of use of premises that will result in work encroaching into the operational airspace of a strategic airport, or on land within the light restriction zone, lighting area buffer or the wildlife hazard buffer zone of a strategic airport, ~~or~~ results in work encroaching into the building restricted area of an aviation facility; or

(ii) a material change of use or reconfiguring a lot where any part of the land is within the 20ANEF contour or greater, or the public safety area of a strategic airport; or

(iii) building work not associated with a material change of use that will result in work intruding into the operational airspace of a strategic airport, or where any part of the premises is within the light restriction zone of lighting area buffer of a strategic airport, or results in work encroaching into the building restricted area of an aviation facility; or

(iv) operational work not associated with a material change of use where any work or associated activity will intrude into the operational airspace of a strategic airport, or where any part of the premises is within the light restriction zone of lighting area buffer of a strategic airport, or results in work encroaching into the building restricted area of an aviation facility.

Where these circumstances apply, the development application is assessed against the strategic airports and aviation facilities assessment benchmarks listed under the SPP.

In this instance the subject land is not affected by a Strategic Airport or Aviation Facility and accordingly, the provisions are not relevant to the assessment of the application.

The proposal has been assessed to comply with all applicable matters of state interest included in the State Planning Policy.

4.3 STATE REFERRAL AGENCIES

Section 54 of the *Planning Act 2016* and Section 22 and Schedule 10 of the *Planning Regulation 2017* are of relevance for the purposes of determining applicable referral agencies and their jurisdiction in terms of being advice or concurrence agencies as well as the relevant assessment benchmarks that are to be addressed.

On 1 July 2013, the Queensland Government launched the State Assessment and Referral Agency (SARA), which makes the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) the assessment manager or referral agency for development applications where the State has a jurisdiction pursuant to Schedule 8 or 10 of the Planning Regulation. Schedule 10 regulates when applications are referable. On the basis of Schedule 8, DSDMIP will not be the assessment manager for this development application. The SDAP components of the overall development will be addressed by DSDMIP as part of the application referral process.

A comprehensive review of the relevant referral triggers described in Schedule 10 of the *Planning Regulation 2017* has been undertaken in respect of the proposed development. The following referrals have been identified:

Referral Trigger Assessment

Part	Application Involving	Applicable	Comment
Part 1	Airport Land	No	The proposed development is not on airport land.
Part 2A	Caboolture West Interim Structure Plan	No	The subject site is not located within the Caboolture West investigation or growth areas.
Part 3	Clearing Native Vegetation	No	The development area does not involve clearing of remnant vegetation.
Part 4	Contaminated Land	No	The subject site does not contain areas identified on the CLR or EMR.
Part 5	**Environmentally Relevant Activities**	**Yes**	**The proposed development involves the extraction and screening of between 100,000t and 1,000,000t of material per annum. As a result, the development will involve a concurrent ERA under the *Environmental Protection Regulation 2019*. The application will require an Environmental Authority for a Concurrent ERA No. 16 (2)(b) and 16(3)(b). It is noted that approval for the Environmentally Relevant Activities will be obtained via an Environmental Authority amendment application for EA Permit No. EPPR01645113.**
Part 6	Fisheries	No	The proposed development is not associated with: • Aquaculture; or • The removal, destruction or damage of marine plants; or • The constructing or raising of waterway barrier works; and • Is not within a declared fish habitat area.
Part 7	Hazardous Chemical Facilities	No	The proposed development is not for a hazardous chemical facility.
Part 8	Heritage Places	No	The proposed development is not associated with a locally listed place. In addition, the site is not associated with nor does it adjoin a property on the Queensland Heritage Register.
Part 9	**Infrastructure-related**	**Yes**	The following relates to infrastructure-related referrals: • The site is not identified as being or adjoining an infrastructure designation. • **The site is located within 25m of a State transport corridor (Balonne Highway)** • The site is not located within 100m of an electricity substation. • The site is associated with an easement for oil or gas infrastructure (Easement S MGL52) however it is noted that the no part of a structure or work that is the natural and ordinary consequence of the use is, or will be, on the easement. • **For state transport infrastructure, the proposed development involves using machinery having an annual throughput of product of greater than 10,000t. Subsequently, Schedule 20 of the *Planning Regulation 2017* applies.** • The site is not in proximity to a State controlled transport tunnel.
Part 10	Koala Habitat Area	No	The subject site does not contain identified Koala Habitat Areas.
Part 11	Noise Attenuation Land	No	The subject site is not identified as being noise attenuation land and the site is not within proximity of an off-road motorcycle facility. This means that the proposed development is not associated with prohibited development.
Part 12	Operational Works for Reconfiguring a Lot	No	The proposed development does not involve Operational Works for Reconfiguring a Lot.
Part 13	Ports		The subject site is not associated with port land.

Part	Application Involving	Applicable	Comment
Part 14	Reconfiguring a Lot under Land Title Act	No	The reconfiguration of a lot is not proposed.
Part 15	SEQ Development Area	No	The subject site is not located within a SEQ Development Area.
Part 16	SEQ Regional Landscape and Rural Production Area and SQ Rural Living Area	No	The subject site is not located within a SEQ Regional Landscape and Rural Production Area or a SEQ Rural Living Area.
Part 16A	Southport Spit	No	The subject site is not located in the Southport Spit.
Part 17	Tidal Works or Work in a Coastal Management District	No	The proposed development does not involve tidal works or works within a coastal management district.
Part 18	Urban Design	No	The proposed development does not involve an increase in Gross Floor Area that is greater than 25,000m^2.
Part 19	Water-related Development	No	The proposed development does not involve: • the taking or interfering of water; or • removing quarry material from a watercourse or lake; or • relates to a dam; or • the construction of a levee.
Part 20	Wetland Protection Area	No	The site is not identified as being within a wetland protection area.
Part 21	Wind Farms	No	The proposed development is not for a wind farm.

On the basis of the above analysis, the project triggers the following referrals:

Referral Trigger	*Planning Regulation 2017*	Agency Type	*Technical Agency*
Material Change of Use for an Environmentally Relevant Activity made assessable under Section 8.	*Schedule 10, Part 5, Division 4, Subdivision 1, Table1, Item 2*	*Concurrence Agency*	***Department of Environment, Science and Innovation***
Development application for a material change of use, other than an excluded material change of use, that is assessable development under a local categorising instrument, if all or part of the premises— (a) are within 25m of a State transport corridor; or (b) are a future State transport corridor; or (c) are— (i) adjacent to a road that intersects with a State-controlled road; and (ii) within 100m of the intersection	*Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1*	*Concurrence Agency*	***Department of Transport and Main Roads***
Development application for a Material Change of Use involving an aspect of development identified in schedule 20, column 1 that meets or exceeds the threshold stated in column 2 for LGA population 2 (extractive industry – annual throughput >10,000 t/a).	*Schedule 10, Part 9, Division 4, Subdivision 1, Table 1, Item 1*	*Concurrence Agency*	***Department of Transport and Main Roads***

The application will be referred to the State Assessment and Referral Agency at the referral stage of the development assessment process.

4.4 STATE DEVELOPMENT ASSESSMENT PROVISIONS

The State Development Assessment Provisions (SDAP) provide assessment benchmarks for the assessment of development applications where the chief executive administering the *Planning Act 2016* (the Act) is the assessment manager or a referral agency. The chief executive through the State Assessment and Referral Agency (SARA) uses the SDAP to deliver a coordinated, whole-of-government approach to the state's assessment of development applications.

The SDAP applies throughout the State and contains the matters of State interest the chief executive may have regard to when assessing/deciding a development application as either the assessment manager or referral agency.

The SDAP contains criteria for assessment within State Codes to clarify when the State is to be involved in the assessment of an application and the specific matters of State interest that apply. The SDAP is a specific assessment benchmark that a development must be assessed against as prescribed under the Regulation.

In this instance, the development triggers assessment against the following State Code:

- State Code 1 – Development in a State Controlled Road Environment;
- State Code 6 – Protection of State Transport Networks; and
- State Code 22 – Environmentally Relevant Activities.

An assessment against State Codes 1 and 6 is included in **Appendix C** of this report. An assessment against State Code 22 is included in the Environmental Assessment included as **Appendix E**.

4.5 DARLING DOWNS REGIONAL PLAN

The Darling Downs Regional Plan was adopted on 14 October 2013 and covers the Local Government Areas (LGAs) of Balonne Shire Council and the Regional Councils of Goondiwindi, Maranoa, Southern Downs, Toowoomba and Western Downs.

The policies contained in the regional plan contribute towards the protection of strategic areas of priority agricultural land use from potentially incompatible resource activities and seek to maximise opportunities for co-existence of resources and agricultural land use.

The regional plan also safeguards areas required for the growth of towns in the regions through the establishment of Priority Living Areas while providing for resource activities to locate within these areas where it meets communities' expectations as determined by the relevant local government.

The subject site is not identified as containing areas of regional interest under the Darling Downs Regional Plan. In this regard the development will support and will not compromise, the achievement of the regional outcomes identified in the Darling Downs Regional Plan.

4.6 BALONNE SHIRE PLANNING SCHEME 2024

4.6.1 INTRODUCTION

Pursuant to the provisions of section 45(5) of the Planning Act 2016, a development application subject to impact assessment must be assessed against the assessment benchmarks in a categorising instrument (planning scheme). The applicable planning scheme (categorising instrument) in this instance is the *Balonne Shire Planning Scheme 2024*.

A summary of the assessment of the proposal against the provisions of this Planning Scheme is outlined below.

4.6.2 DEFINITIONS

Under the *Balonne Shire Planning Scheme 2024*, the proposed development is defined as an **Extractive Industry.** The relevant use definition is as follows:

" The use of premises for –

(a) Extracting or processing extractive resources; and

(b) Any related activities including, for example, transporting resources to market.

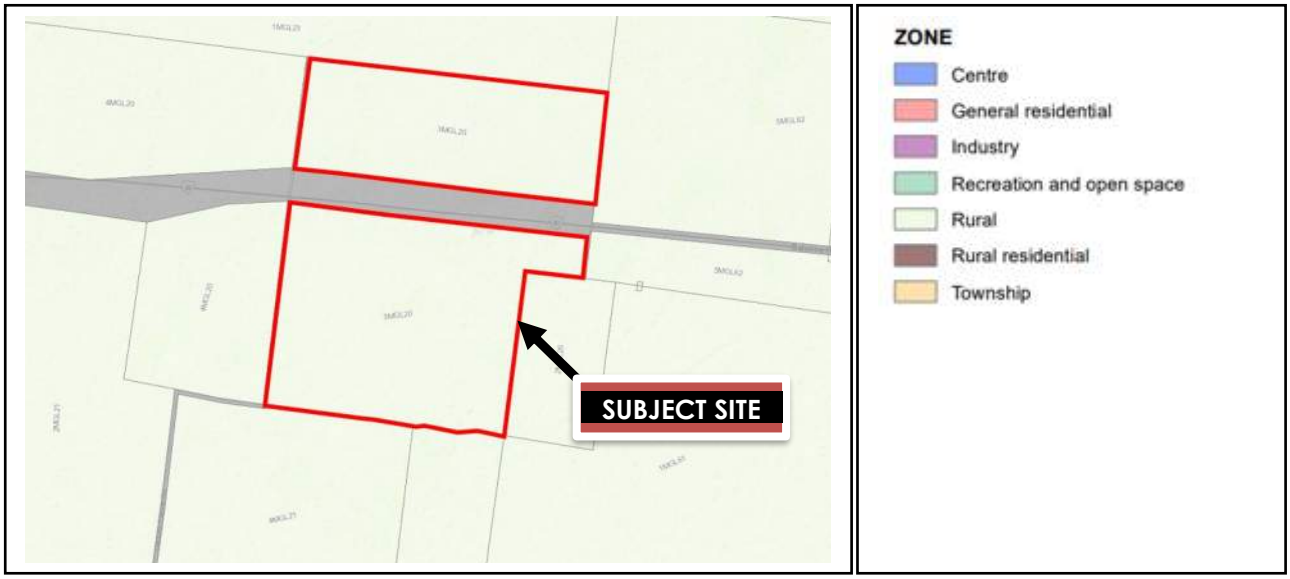
4.6.3 ZONING, LOCAL PLAN AND ASSESSMENT STATUS

4.6.3.1 Zoning

Under the *Balonne Shire Planning Scheme 2024*, the region is divided into seven (7) land use zones. Certain zones are further divided into precincts for the purposes of conveying preferred land use intent or in order to assign assessment status to individual uses.

The subject land is included in the **Rural Zone.** The zoning of the subject site and surrounding locality is illustrated on **Figure 7**.

FIGURE 7 - ZONING PLAN



Under the assessment tables for the Rural Zone at section 5.5.5 of the Planning Scheme, a Material Change of Use for an Extractive Industry is identified as subject to **Impact Assessment**.

Planning Intent: Rural Zone

Section 6.2.5.1 of the *Balonne Shire Planning Scheme 2024* outlines the general intent for land within the Rural Zone. The overall outcomes sought for this zone are reproduced below:

Rural Zone

(a) the zone primarily accommodates grazing and value-adding rural uses where they do not conflict with petroleum leases or facilities or stock routes.

(b) new small-scale tourist development are accommodated where they:

i. are associated with and do not threaten the viability of existing rural uses.

ii. *assist with maintaining the viability of existing rural production enterprises.*

iii. *support and add to the quality of experiences on the Adventure Way and Great Inland Way.*

iv. *protect extractive resources from local and state significance and operating extractive industry from encroachment by incompatible uses.*

(c) new extractive industries are established only where they do not impact on the viability of existing agricultural, residential and tourist uses.

(d) biodiversity values and ecological connectivity associated with MSES are protected and maintained.

(e) development is serviced with infrastructure including formal road access and is appropriate for the level of risk associated with any flood and bushfire hazard.

Assessment

The proposed Material Change of Use for an "Extractive Industry" is impact assessable within the Rural Zone, however, the overall outcomes of the Rural Zone Code support the establishment and operation of Extractive Industries within the zone. The proposal positively responds to the purpose and overall outcomes of the zone as follows:

- The proposed development assists the economic potential of the area through diversification of rural activities. In this regard, the development supports and will not adversely affect the viability of on-site and surrounding rural activities.
- The development will not compromise the agricultural use of the subject land or surrounding properties.
- The development does not involve the construction of new buildings or infrastructure, and the proposal involves the orderly and planned expansion of the existing quarry on the subject site. Consequently, the proposal does not result in the further fragmentation, alienation or degradation of agricultural land and will not affect the productive capacity of the land.
- The development is more appropriately located in a rural area, as opposed to being located in an urban/built-up area where the potential for land use conflicts may arise due to extraction activities and the use of heavy vehicles. The nature of the surrounding locality, which comprises an established agricultural area, is such that the use of heavy vehicles is consistent with surrounding activities and within the reasonable amenity expectations of the community. Furthermore, the development is suitably separated from sensitive receptors to ensure the proposal does not result in adverse amenity impacts on off site receptors.
- The nature of the development protects the landscape character of the area noting the development does will not involve additional buildings or site access. Earthworks are commensurate with the orderly and planned expansion of the existing quarry;
- The development is not located on, or in proximity to, areas of ecological significance or environmentally sensitive areas and maintains natural drainage channels.
- The nature and location of the development is such that it will maintain a high level of amenity and will not introduce unreasonable impacts including excessive traffic, noise, dust, odour, or lighting into the locality.
- The subject land is only marginally impacted by the Flood Overlay and affected areas are suitably separated from the existing or proposed extraction areas.

The above assessment demonstrates the proposed development generally satisfies the intent and outcomes sought for the Rural Zone.

4.6.4 OVERLAY MAPPING

The Planning Scheme includes overlay maps that identify land characterised by particular features or subject to physical constraints that are likely to influence the use and development potential of affected areas. Overlay maps also identify those lands subject to assessment against specific area codes. In this instance, the subject land is marginally impacted by the Flood Hazard Overlay, as illustrated in **Figure 8**.

FIGURE 8 - FLOOD HAZARD OVERLAY MAPPING

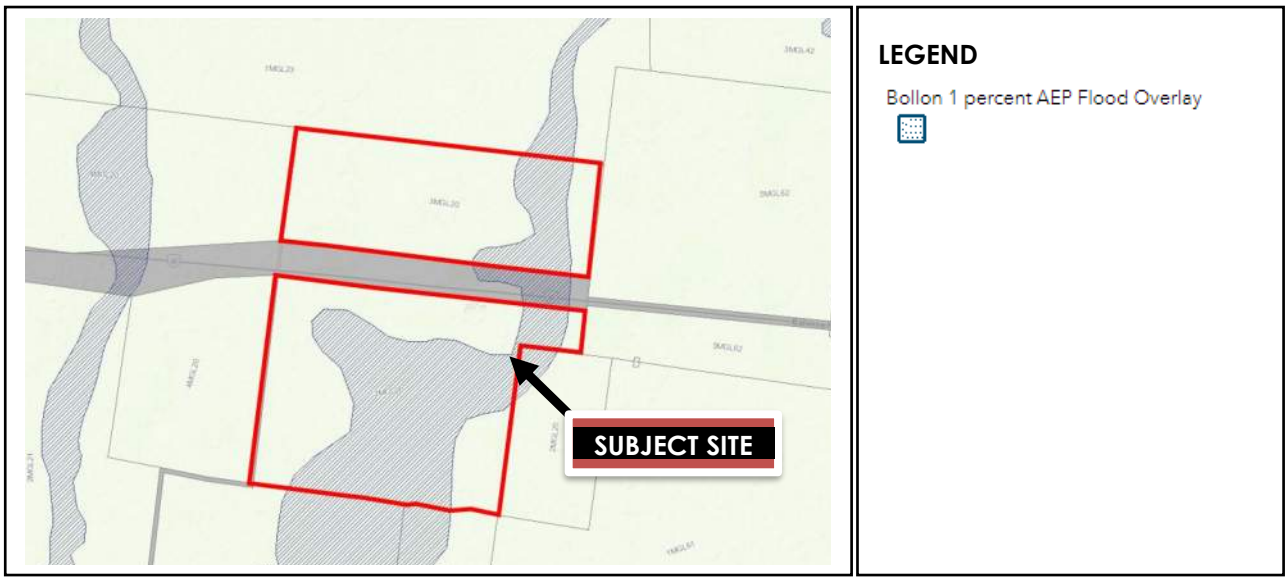


Figure 8 confirms the subject site contains areas identified as Flood Hazard Overlay – Locally Verified. The *Balonne Shire Planning Scheme 2024* addresses flood hazard considerations under the Flood Hazard Overlay Code. This development is assessed against the provisions of the Flood Hazard overlay Code at section 4.7 of this report.

4.6.5 STRATEGIC FRAMEWORK

Part 3 of the *Balonne Shire Planning Scheme 2012* provides the Strategic Framework that sets the policy direction for the planning scheme and forms the basis for ensuring development occurs at appropriate locations within the planning scheme area. The structure of the Strategic Framework comprises:

- a statement of Strategic Intent
- five (5) themes supported by strategic outcomes; and
- elements that further refine the strategic outcomes sought.

The development has been assessed against the applicable provisions of the Strategic Framework and a summary of this assessment is provided in the table attached at **Appendix B**. An assessment of the proposal against the provisions of the Strategic Framework indicates the proposal complies with the integrated policy direction sought for the planning scheme area and will not compromise the relevant strategic outcomes/elements sought for the individual themes.

4.7 ASSESSMENT BENCHMARKS

The tables below identify the codes applicable to the assessment of each aspect of the proposed development.

Applicable Codes

Code
Zone Code(s)
• Rural Zone Code
Overlay Codes
• Flood Hazard Overlay Code
Other Codes
• General Development Code

Assessment against the applicable codes is provided at **Appendix A**.

5.0 SPECIALIST ASSESSMENTS

5.1 INTRODUCTION

The following specialist assessments have been completed to respond to and/or demonstrate the compliance of the proposal with applicable standards:

- Environmental Assessment Report, prepared by Range Environmental Consultants; refer to section 5.2 and **Appendix E**.
- Site Based Management Plan, prepared by Range Environmental Consultants; refer to section 5.3 and **Appendix F**.
- Stormwater Management Plan, prepared by RMA Engineers; refer to section 5.4 and **Appendix G**.
- Traffic Impact Assessment, prepared by RMA Engineers; refer to section 5.5 and **Appendix H**.

While the individual assessments should be referenced directly for detailed analysis, findings and recommendations, key outcomes are summarised briefly below.

5.2 ENVIRONMENTAL ASSESSMENT REPORT

5.2.1 INTRODUCTION

An Environmental Assessment Report has been prepared for this development by Range Environmental, dated 8 August 2024 and is attached as **Appendix E.**

The purpose of the Environmental Assessment Report is to identify, analyse and mitigate potential environmental impacts of the proposed development on the surrounding locality.

5.2.2 CONCLUSIONS/RECOMMENDATIONS

The Environmental Assessment Report makes the following conclusions at section 10:

> *The proposal involves an increase quarrying footprint and an increase rate of extraction, screening and crushing at the existing 'Rockville Pit' quarry located across a portion of Lot 3 MGL20.*
>
> *The qualitative environmental impact risk assessment considered the potential for harm to occur to environmental values from project emissions and relevant aspects of the expansion and operation of the quarry.*
>
> *The proposed expansion will not have a significant residual impact on a PEM therefore no environmental offsets are required.*

5.3 SITE BASED MANAGEMENT PLAN

5.3.1 INTRODUCTION

A Site Based Management Plan has been prepared for this development by Range Environmental Consultants, dated 8 August 2024 and is attached at **Appendix F**. This report assesses the potential impacts generated by the development and provides recommendations for the operation of the facility.

5.3.2 CONCLUSIONS/RECOMMENDATIONS

The Site Based Management Plan provides recommendations for the design and operation of the proposed development to ensure any impacts are contained within the site and do not adversely impact nearby sensitive receptors or the environment.

5.4 STORMWATER MANAGEMENT PLAN

5.4.1 INTRODUCTION

A Stormwater Management Plan has been prepared for this development by RMA Engineers, dated 14 February 2024 and is attached at **Appendix G**. This report addresses the stormwater management of the site and ensures compliance with the State Planning Policy and other relevant requirements.

5.4.2 CONCLUSIONS/RECOMMENDATIONS

The Stormwater Management Report makes the following conclusions at section 6:

> *The overall stormwater management strategy outlines that the proposed development will reduce the size of the contributing catchments discharging external to the site in the design scenario. For this case, the reduced catchments will therefore not increase the median post-developed peak flow discharging from the site.*
>
> *Once excavation begins, the proposed development will not result in an actionable nuisance with quantifiable loss to properties or road infrastructure, state-controlled or otherwise, downstream of the development.*
>
> *A detention basin has been designed to mitigate median peak runoff flows from post-developed catchment D3. Detained runoff will be discharged to the north through a pipe outlet.*
>
> *Four sediment basins have been designed for the 24-hour 5 year storm event to mitigate sediment loads leaving the development site.*
>
> *Dirty water drains have been designed to convey runoff internal to the development to the sediment basin.*

5.5 TRAFFIC IMPACT ASSESSMENT

5.5.1 INTRODUCTION

A Traffic Impact Assessment has been prepared for this development by RMA Engineers, dated 26 July 2024 and is attached at **Appendix H**.

5.5.2 CONCLUSIONS/RECOMMENDATIONS

The Traffic Impact Assessment makes the following conclusions at section 10:

> *RMA Engineers has been engaged by Tierney Crushing and Transport Pty Ltd to undertake a Traffic Impact Assessment (TIA) in support of a development application for the proposed use of a quarry (gravel pit) for extraction of hard rock. The 4,854ha site is formally identified as Lot 3 on MGL20 within the Balonne Shire Council (BSC) area and is named Rockville Quarry. The quarry is situated approximately 23km and 136km west of the Bollon and St George townships, respectively.*

This Traffic Impact Assessment has been undertaken in general accordance with the road transport related requirements identified in the Department of Transport and Main Roads (DTMR) Guide to Traffic Impact Assessment (GTIA) (2018).

The following is a summary of the findings and recommendations of the TIA:

Operational impacts:

- *The development will generate low daily traffic volumes, consisting of an average of nine heavy vehicles per day for the average extraction rate (i.e. 160,000 tonnes per year).*
- *The anticipated 2034 'background with development' hourly traffic volumes do not exceed the hourly volume combinations shown in Table 6-1. Therefore, intersection analysis is not deemed warranted for the key intersection of Balonne Highway/Site Access. It is expected that this intersection will operate under practical capacity with the proposed development volumes.*

Pavement impacts:

- *The GTIA PIA assessment methodology is not considered to be appropriate for this site, due to the very low background traffic volumes on Balonne Highway, and long haulage routes to the nearest townships.*
- *The site is expected to generate very low traffic demands on the external road network, conservative estimated as nine additional heavy vehicles per day for the worst case direction (east to/from Bollon). This is considered to have a negligible pavement impact due to the low volumes generated. It is expected that the construction of the existing road and associated maintenance activities would include contingency to cater for such a minor number of additional vehicles.*
- *An assessment of minimum pavement depth design found that the impact of development traffic is minor, with an estimated additional depth of 23mm which equates to a 4.3% increase. This is in the vicinity of the construction tolerance (i.e. ~20mm) and is not considered to be significant.*
- *From pavement impact considerations, it is concluded that the development is expected to have a negligible pavement impact on the surrounding road network and no action is required for external pavement upgrades or maintenance contributions for the development.*

Safety considerations:

- *From a historical crash data review, no crash patterns or mitigation measures could be identified within the vicinity of the site.*
- *From the turn warrant assessment the access does not trigger any upgrades from its existing SL and SR formation, and channelisation is not required. This is deemed appropriate given the access function of the intersection, the rural nature of the site and the low volumes of the adjacent highway.*
- *A desktop sight distance review for the Balonne Highway/Site Access intersection found that sight distances are adequate. The surrounding area has relatively flat topology and vegetation setback from the edge of the highway. Therefore, no sight distance safety issues are identified.*
- *From a review of the site access intersection, the following items were identified:*
    - *It is recommended that the developer consider installing 'trucks turning' warning signage (W5-205) on the approaches to the site access.*

- *It is recommended that the developer consider installing road edge guide posts at the turn outs to the access, to increase the delineation of the access intersection.*
- *From a swept path assessment, it is identified that the site access intersection is suitable for the anticipated design vehicle movements.*

- *A review of safety risk items found no high risk safety issues or increase in risk scores relating to use of the external road network by development traffic.*
- *It was identified that DTMR consider widening the road pavement of the Balonne Highway to provide 3.5m lane widths and associated shoulders to help mitigate the risk of head-on and off-road crashes due to the current narrow road carriageway. This will depend on DTMR planning and intervention levels and benefit versus cost investigations for the corridor.*

Internal layout considerations:

- *From a high-level internal layout review, the proposed site access, internal gravel roads and circulation, and parking and loading provision are deemed satisfactory. The internal layout can be refined as necessary in future operational stages.*

With respect to the above findings and recommendations of this TIA report, the proposed development can proceed without any unacceptable or adverse impacts on the external road network. No traffic and transport engineering matters have been identified that should preclude approval of the proposed development at this location.

6.0 CONSULTATION AND REFERRALS

6.1 STATUTORY NOTIFICATION

The development application is impact assessable and accordingly is subject to statutory public notification under the provisions of the *Planning Act 2016* and its associated regulations.

Public notification will be undertaken at the appropriate stage, as set out in the Development Assessment rules prescribed under the *Planning Regulation 2017*.

6.2 PRE-LODGEMENT MEETINGS

The development proposal has been the subject of informal pre-lodgement discussions prior to lodgement.

The outcomes and advice provided by the respective agencies has been taken into consideration in the design of the development and the preparation of this development application.

7.0 CONCLUSION

The combined development application seeks approval for a Development Permit for a Material Change of Use for "Extractive Industry" and associated Environmentally Relevant Activities to allow the extraction and screening of quarry material within the threshold of 100,000 - 1,000,000 tonnes per annum on the subject land.

The material to be extracted as part of operations will be used primarily for road construction and related maintenance purposes but may also have associated construction applications. There are limited quarries in the region that can supply the required type and mix of materials capable of meeting Austroads specifications for road sub-base and pavement construction. There is consequently a latent unsatisfied planning need justifying the approval of the proposed Extractive Industry.

The development site is located within the Rural Zone and the proposed use of Extractive Industry is identified as Impact Assessable development, however, the use is supported within this Zone. Despite the use being impact assessable, the proposed development is generally consistent with the detailed provisions of the *Balonne Shire Planning Scheme 2024*, including the intent of the zone and detailed design standards and requirements. Further to this, the development was found to generally comply with the Strategic Framework of the Planning Scheme.

The design and layout of the premises allows potential sources of nuisance and impact to be appropriately managed to ensure the development will not adversely affect the amenity of adjoining residential uses or cause environmental harm. In addition, the development will not contribute to access, safety or circulation problems in the locality or on the adjacent State Controlled Road network.

Having regard to the matters and issues raised in this report, it is recommended that Council support the application for Development Permit for Material Change of Use. The proposal warrants approval subject to the imposition of reasonable and relevant conditions.

Andrew Bullen
Precinct Urban Planning

APPENDIX A – ASSESSMENT BENCHMARKS

Balonne Shire Planning Scheme 2019 **Rural Zone Code**		
Performance outcomes	**Acceptable outcomes**	**Compliance summary**
For assessable development		
PO1 Proposed uses established in the Rural zone do not conflict with existing rural land uses or the biodiversity (including MSES), scenic and community values of the area.	**AO1** No acceptable outcome is prescribed.	**Complies:** The proposal involves an increase in the intensity of the existing extractive industry use to enable extraction within the threshold of 100,000 to 1,000,000 tonnes per annum. Extractive Industry is a use specifically accommodated and encouraged on land within the Rural Zone. The purpose and outcomes of the Zone specifically provide for extractive resources of local and state significance to be protected from encroachment by incompatible uses.
PO2 Uses established in the Rural zone do not conflict with: (a) petroleum infrastructure that occurs on petroleum leases or under petroleum facility licences and pipeline licences. (b) the function of stock routes. (c) mining leases and claims.	**AO2.1** Development is located a minimum of 200m from a pipeline or pipeline easement in SPP Mapping – Hazards and Safety – Emissions and Hazardous Activities – High pressure gas pipelines. Schedule 4 – Online Mapping Resources – Mines Online Maps. **AO2.2** No acceptable outcome is prescribed for the use of lots fronting the stock route network on SPP mapping – Economic Growth, Agriculture, Stock Route Network. **AO2.3** Development that occurs within a priority agricultural area is undertaken in accordance with the *Regional Planning Interests Act*.	**Complies:** The subject site is impacted by a high pressure gas pipeline. In this respect, the development site area is located in excess of 200m from the pipeline and will not conflict with the petroleum infrastructure. **N/A.** **N/A:** The development area is not located within a priority agricultural area.
PO3 Tourist uses that support the primary rural uses on the site are limited in scale and do not threaten the viability of traditional rural uses.	**AO3** No acceptable outcome is prescribed.	**N/A:** The use is not a tourist use.

Balonne Shire Planning Scheme 2019

Rural Zone Code

Performance outcomes	Acceptable outcomes	Compliance summary
PO4 Extractive industry is adequately separated from sensitive land uses to minimise potential for nuisance or complaint.	**AO4.1** Residential and other sensitive uses, are not located: (a) within 200m of mechanical extraction of sedimentary deposits; or (b) within 1,000m of hard rock extraction. **AO4.2** New extractive uses and activities are not established within 1,000m of existing sensitive rural, residential or tourist uses.	**Complies:** The proposed extractive industry is situated 20km west of the Township of Bollon in an area used uniformly for rural purposes. Section 3 of the Site Based Management Plan attached at **Appendix F** confirms the closest sensitive receptor is situated 4.4km from the subject land and approximately 6.6km from the development (extraction) site.
PO5 Development is connected to an appropriate level of infrastructure services.	**AO5.1** Development has formal and safe access to the existing road network. **AO5.2** Development is connected to a reticulated water supply and sewerage system, or alternatively an on-site water storage and a waste disposal system is provided which does not overflow to adjoining properties or detract from environmental values. **AO5.3** The development is connected to electricity or an alternative renewable energy source and telecommunications.	**Complies:** The extractive industry obtains direct access from the Balonne Highway. No water cycle infrastructure is available to the land. Electricity is available to the land.
PO6 Development is located to protect sensitive land uses from the impacts of previous activities that may cause risk to people or property including land containing former mining activities and hazards e.g. disused underground mines, tunnels and shafts.	**AO6** No acceptable outcome is prescribed.	**N/A:** No issues of land stability exist on the land.

Balonne Shire Planning Scheme 2019

Rural Zone Code

Performance outcomes	Acceptable outcomes	Compliance summary
Note: A geotechnical assessment report prepared by a suitably qualified and experienced person will assist in demonstrating the achievement of the performance outcome where a possible risk from former mining activities is identified through local knowledge, a predevelopment ground inspection, Schedule 4 – Online Mapping Resources – Mines Online Maps, or other sources.		
PO7 Renewable energy facilities are located and designed to avoid adverse impacts on sensitive uses including impacts on privacy, safety, noise, odour and fumes by lighting and traffic generation.	**AO7** No acceptable outcome is prescribed.	**N/A:** The application does not seek approval for a renewable energy facility.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
Built Form		
PO1 Development is resilient to flood events by ensuring design and built form to account for the potential risks of flooding.	**AO1.1** Habitable floors (including extensions and/or redevelopment) are built to at least the Minimum Habitable Finished Floor Level (MHFFL) specified for the subject lot. Note—Refer to Schedule 4 – Flood Mapping (MHFFL). For the avoidance of doubt, the freeboard allocated (0.55m within designated Flood Hazard Areas) includes an allowance (0.25m) for the underside of the lowest component of flooring used (such as the underside of floor bearers or suspended slab) to also be constructed above flood waters. **AO1.2** The design and layout of buildings used for residential purposes minimise risk from flooding by providing parking and other low intensity, non-habitable uses at ground level. Note—The high-set 'Queenslander' style house is a resilient low-density housing solution in floodplain areas. The use of floor area below the MHFFL for nonhabitable use is acceptable (such as for storage, car garaging, laundries or bathrooms) where residents are aware of the risk of loss of property from flood inundation and the possible implications for increased insurance premiums. It is acceptable for a slab to be placed underneath a high-set dwelling for non-habitable purposes.	**N/A:** The proposed development is for an Extractive Industry and does not involve any residential uses. **N/A:** The proposed development is for an Extractive Industry and does not involve any residential uses.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
	Note—Higher density residential development should also ensure only non-habitable rooms (e.g. garages laundries) are located on the ground floor.	
	AO1.3 The maximum building height for a dwelling is 8.5m.	**N/A:** The proposed development is for an Extractive Industry and does not involve any residential uses.
	AO1.4 The maximum site coverage for residential outbuildings does not exceed 5% of the total site area.	**N/A:** The proposed development is for an Extractive Industry and does not involve any residential uses.
	Note—The Queensland Development Code specifies acceptable setbacks from property boundaries. Residents must also be aware of the risk of property loss associated with development residential outbuildings in areas subject to flood.	
	AO1.5 Boundary fences do not impede the flow of floodwater.	**N/A:** The subject land does not contain any boundary fences and the proposed development does not propose any new fencing.
	Note—Fences should be designed to allow flow of floodwaters but remain in situ so as not to create a hazard.	
	AO1.6 Non-residential uses and structures: (a) area built above the minimum habitable finished floor level; or (b) allow for flow through of flood waters.	**Complies:** The proposed office building will be situated above the minimum habitable finished floor level.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
	AO1.7 Materials stored on-site: (a) are those that are readily able to be moved in a flood event. (b) where capable of creating a safety hazard by being shifted by flood waters, are contained in order to minimise movement in times of flood. Note—Non-residential uses and structures, need not comply with the minimum habitable finished floor levels for non-habitable rooms/areas, however in this instance businesses should be aware of the flood risk they are subject to. To help mitigate this risk businesses should ensure that they have the necessary continuity plans in place to account for the potential need to relocate property prior to a flood event (e.g. allow enough time to transfer stock to the upstairs level of a building or off site.) Advice on the use of flood resilient building materials is also available from Building Codes Queensland. www.hpw.qld.gov.au/SiteCollectionDocuments/WaterResilientProductsAndBuildingTechniquesForRebuildingAfterAFlood.pdf	**N/A:** The development area is located beyond the extent of mapped flood hazard areas and the development will not result in hazardous or noxious or comprise materials being discharged in a flood event.
Development siting and layout		
PO2 Development siting and layout, responds to flooding potential and maintains personal safety at all times.	Where not located in the Limited Residential Precinct refer to Schedule 4 – Flood hazard overlay map (Limited Residential Precinct) **AO2.1** New Lots are: (a) located outside the overlay area; (b) are demonstrated to be above the flood level identified for the sire; or	**N/A:** The development is for an Extractive Industry only and does not involve the creation of new lots.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
	(c) located on the highest part of the site to minimise entrance of floodwaters. Note—If part of the site is outside the Flood hazard overlay map, this is the preferred location for all lots (excluding part or other relevant open space and recreation lots). Note—Buildings subsequently developed on the lots created will need to comply with the relevant building assessment provisions under the Building Act 1975. **AO2.2** Road and/or pathway layout ensures residents are not physically isolated from the adjacent flood free urban areas and provides a safe and clear evacuation route path: (a) by locating entry points into the reconfiguration above the flood level and avoiding cul-de-sacs or other nonpermeable layouts. (b) by direct and simple routes to main carriageways that allow trafficable access up to a maximum flood depth of 300mm. **AO2.3** Signage is provided on site (regardless of whether land is in public or private ownership): (a) indicating the position ad path of all safe evacuation routes off the site. (a) if the site contains or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points, such as at floodway crossings or entrances to low-lying reserves.	

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
Effects on flood behaviour		
PO3 Development directly, indirectly and cumulatively avoids any increase in water flow velocity or flood level, and does not increase the potential for flood damage either on site or on other properties.	**AO3.1** Development does not block or divert floodwaters in a manner that increases flood level or velocity on site or on other properties. Note—Berms/mounds are considered to be an undesirable built form outcome and are not supported. **AO3.2** Works do not involve any physical alteration to a watercourse or floodway including vegetation clearing. **For operational works where located within the Residential Resilient Precinct or Limited Residential Precinct:** **AO3.3** Development involves no net increase in filling on site. Note—Fill associated with building work must comply with the relevant sections of the building assessment provisions. Onsite compensatory cut and fill would achieve the 'No net increase' requirement. For operational works in all other zones/precincts: **For operational works in all other zones/precincts:** **AO3.4.** Works (including buildings and earthworks) either:	**N/A:** The development area is located beyond the extent of mapped flood hazard areas and will not adversely impact on floodwaters.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
	(a) do not involve a net increase in filling greater than 500m³ (compacted); or (b) do not result in any reductions of onsite flood storage capacity and contain within the subject site any changes to depth/duration/velocity of flood waters; or (c) do not change flood characteristics outside the subject site in ways that result in: (i) loss of flood storage. (ii) loss of/changes to flow paths. (iii) acceleration or retardation of flows; or any reduction in flood warning times elsewhere on the floodplain.	
Hazardous materials		
PO4 Development avoids the release of hazardous materials or contaminants into floodwaters.	**Material Change of Use:** **AO4.1** Materials manufactured or stored on site are not hazardous or noxious, or comprise materials that may cause a detrimental effect on the environment if discharged in a flood event; OR **AO4.2** Where a MHFFL is adopted (refer to Schedule 4 – Flood hazard overlay map Maps R8 B1b, B3b, C2b, C3b and C3f), structures used for the manufacture or storage of hazardous materials are: (a) located above the MHFFL level; or (b) designed to prevent the intrusion of floodwaters.	**N/A:** The development area is located beyond the extent of mapped flood hazard areas and the development will not result in hazardous or noxious or comprise materials being discharged in a flood event.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
	AO4.3 If a specific MHFFL for the site is not adopted, hazardous materials and their manufacturing equipment are located on the highest part of the site to enhance flood immunity and are designed to prevent the intrusion of floodwaters. Note—Refer to the Work Health and Safety Act 2011 and associated Regulation and Guidelines, the Environmental Protection Act 1994 and the relevant building assessment provisions under the Building Act 1975 for requirements related to the manufacture and storage of hazardous substances.	
Disaster management responses		
PO5 The development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities.	**AO5** Development does not: (a) increase the number of people calculated to be at risk from flooding (b) increase the number of people likely to need evacuation. (c) shorten flood warning times. (d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes.	**N/A:** The development area is located beyond the extent of mapped flood hazard areas and will not adversely impact on floodwaters.
Community infrastructure		
PO6 Development involving community infrastructure (defined as Sensitive Land Uses and Community Oriented Uses under this planning scheme):	**Where not located within the Resilient Residential Precinct:** **AO6.1**	**N/A:** The proposed development does not involve community infrastructure.

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
(a) remains functional to serve community need during and immediately after a flood event. (b) is designed, sited and operated to avoid adverse impacts on the community or environment due to the impacts of flooding on infrastructure, facilities or access and egress routes. (c) retains essential site access during a flood event. (d) and is able to remain functional even when infrastructure or services may be compromised in a flood event.	Sensitive Land Uses and Community Oriented Uses are not located on land inundated during a 1% AEP flood event. OR **AO6.2** Sensitive Land Uses and Community Oriented Uses incorporate an area on site above the MHFFL with sufficient space to accommodate the likely population of the development in safety for a relatively short time until flooding subsides or people can be evacuated. AND **AO6.3** Sensitive Land Uses and Community Oriented Uses have direct access to low hazard evacuation routes as defined in Table 7.4.3.6. AND **AO6.4** Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood, such as electrical switch gear and motors, telecommunications connections, or water supply pipeline air values are: (a) located above the MHFFL for the site. (b) designed and constructed to exclude floodwater intrusion/infiltration.	

Balonne Shire Planning Scheme 2019

Flood Hazard Overlay Code

Performance outcomes	Acceptable outcomes	Compliance summary
	AND **AO6.5** Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by a flood. **AO6.6** The following uses are not located on land inundated during a 0.5% AEP flood event: (a) emergency shelters (b) police facilities. **AO6.7** The following uses are not located on land inundated during a 0.2% AEP flood event: (a) correctional facilities (b) emergency services (c) power station (d) major switch yards.	

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
Site Layout		
PO1 The size and bulk of new buildings associated with development maintains and enhances the intended local character of the zone by avoiding over-development of the site, and allowing for development at a consistent scale, siting and intensity to nearby development.	**AO1** Total development on the site has a maximum site cover as follows: • 50% Township zone • 90% Centre zone • 85% General residential zone • 40% Industry zone.	**N/A:** The subject land is located in the Rural Zone.
PO2 Landscaping is provided to enhance the visual appeal of the development and soften the appearance of the built form. The majority of landscaping is to be undertaken on the principal street frontage of the development.	**AO2** Except in the St George Centre zone, a minimum of 10% of the total development area is landscaped.	**N/A:** The proposed development involves an Extractive Industry use and is located in the Rural Zone.
Building Design		
PO3 New development maintains the low-rise scale and character of the Shire.	**AO3** Except where in the St George Centre zone, development is no higher than: • 2 storeys; or • 8.5m above ground level.	**N/A:** The proposed development does not involve any new buildings.
PO4 New buildings or structures present a traditional façade to the street.	**AO4** Except where in the St George, Dirranbandi Centre and industry zones, at least three of the four elements below must be incorporated into the façade of new buildings: • verandas or porches. • awnings and shade structures. • variations to the roof and building lines.	**N/A:** The proposed development does not involve any new buildings.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	• a range of building materials, matching prevailing materials in neighbouring buildings.	
PO5 Development is generally in accordance with existing setbacks within the locality.	**AO5** No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve any new buildings.
Dual Occupancies and Multiple Dwellings		
PO6 The design, appearance and form of development for Dual Occupancy or a Multiple Dwelling reflects a high standard and permanent form of accommodation that complements the character of existing residential development in the Shire. Editor's note— Dwellings having the appearance of relocatable dwellings or other temporary structures are discouraged and unlikely to meet this performance outcome. However, this provision is not intended to preclude creative or adaptive building design outcomes where exhibiting strong architectural merit and visual appeal	**AO6** No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve a Dual Occupancy or Multiple Dwellings.
PO7 Building scale, form and site layout is consistent with existing prevalent residential architectural features and site layouts (e.g. location of building at the front of the lot, parking at the side or rear of dwellings, one larger building rather than multiple small buildings). Editor's note— Dwellings having the appearance of relocatable dwellings or other temporary structures are generally discouraged and unlikely to meet the performance outcome. However, this provision is not intended to preclude creative or adaptive building design outcomes where exhibiting strong architectural merit and visual appeal.	**AO7** No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve a Dual Occupancy or Multiple Dwellings.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
PO8 Landscaping is provided for site presentation privacy and shade.	**AO8** No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve a Dual Occupancy or Multiple Dwellings.
Ancillary Uses		
PO9 Other than where located in the Rural zone, buildings and structures for ancillary uses and activities such as sheds are subordinate in use and size to the primary use of the premises.	**AO9** Other than where located in the Rural zone, buildings and structures for ancillary uses and activities do not exceed: • 80m² gross floor area (all zones except Rural zone, Rural residential zone and Township zone) • 100m² gross floor area (Rural residential zone) • 15% of remaining site area (Township zone).	**N/A:** The proposed development is for an Extractive Industry and is located within the Rural Zone.
Access, manoeuvring and parking		
PO10 The proposed development accommodates sufficient car parking on site.	**AO10** Car parking is provided at rates as per table 7.3.1.2	**Complies:** There is ample area for informal staff parking and truck loading within the development site area. Where necessary, the internal site layout can be refined in future operational stages of the development.
PO11 The proposed driveway is clear of all impediments.	**AO11** The proposed driveway is clear of street furniture, gully pits, man holes, power poles and street trees	**Complies:** The development will utilise the existing driveway providing access to the extraction areas from the Balonne Highway. The existing configuration of the driveway is suitable to cater for the quarry expansion and no alterations are required; refer to the Traffic Impact Assessment attached as **Appendix H**.
PO12 The location of driveways does not create a danger to the safety and efficiency of existing intersections.	**AO12** The minimum distance of a driveway from an intersection of one street with another is 6m.	**Complies:** The existing driveway will remain unchanged, and functions to an appropriate standard from a safety and functionality perspective; refer to the Traffic Impact Assessment attached as **Appendix H**.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
		The driveway is not within 6m of an intersection of a street.
PO13 Access to, from and within the site: • is adequate for the type and volume of traffic generated by the use. • does not adversely impact on the traffic network external to the site. • caters for safe pedestrian access. • provides for disabled access.	**AO13.1** Vehicle crossovers are designed in accordance with BSC standards. **AO13.2** Car parking and manoeuvring areas are designed in accordance with: • AS2890.1 – Parking Facilities • Austroads AP-34/95 - Design Vehicles and Turning Path Templates • The Access to Premises Standard' (Vol 1 of the National Construction Code).	**N/A:** No new access driveway is proposed. The existing access driveway is adequate for the type and volume of traffic generated by the use and does not adversely impact on the traffic network external to the site. Refer to the Traffic Impact Assessment attached as **Appendix H**.
Infrastructure and Services		
PO14 The development is supplied with an appropriate level of infrastructure to support the intended use.	**AO14** Telecommunications and electricity supplies are designed and installed to supplier standards.	**Complies:** Telecommunications and power are available to the site.
PO15 All development has an adequate supply of potable water and can provide for appropriate treatment and disposal of effluent and other waste water. **Note:** If the development is not connected to a reticulated water supply network, there is no guarantee of reliability or availability of water from watercourses, overland flow or underground water for new nonstock and domestic development across the Balonne Shire. This is because access to water is subject to the limitations and appropriate authorisation under the Water Act 2000.	**AO15.1** In the General residential, Centre, Industry and Township zones, all development is connected to BSC's reticulated water supply network. In the Recreation and Open Space and Rural zones, a potable water supply is provided. **AO15.2** In the General residential, Centre, Industry and Township zone, all development is connected to BSC's reticulated sewerage network.	**N/A:** The proposed development is for an Extractive Industry and is located in the Rural Zone.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	In the Recreation and Open Space and Rural zones, sewage disposal is provided generally in accordance with the Queensland Plumbing and Wastewater Code. *Note: Appropriate authorisation is required under the Water Act 2000 for the take of water from watercourses, overland flow or underground water.*	
PO16 Stormwater is collected and discharged to ensure no impacts on adjoining land owners, BSC or State infrastructure while also ensuring environmental values of waters in the Shire are maintained.	**AO16** In all zones, stormwater drainage is provided in accordance with: • Queensland urban drainage manual, 3rd Edition, Queensland Department of Energy and Water Supply, 2013 • Pilgrim, DH, (ed)., Australian Rainfall & Runoff – A Guide to Flood Estimation, Institution of Engineers, Australia, Barton, ACT, 1987 • Class 1 and Class 10 buildings – National Construction Code, Volume 2.	**Complies:** Reference is made to the Stormwater Management Plan which has been prepared by RMA Engineers and attached at **Appendix G**.
PO17 Wastewater discharge to a waterway is avoided or managed in a way that maintains ecological processes, riparian vegetation, waterway integrity, and downstream ecosystem health.	**AO17.1** Wastewater from development is not discharged to a waterway. Alternatively, where wastewater discharge to a waterway is unavoidable, a wastewater management plan (WWMP) is submitted, which provides a waste management hierarchy that minimises wastewater discharge to waterways by re-use, recycling, recovery and treatment for disposal to sewer, surface water and groundwater. This WWMP is prepared by a suitably qualified person and addresses: • wastewater type • climatic conditions • water quality objectives (WQOs) • best-practice environmental management.	**Complies:** Wastewater will not be discharged from the site or into a waterway.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	AO17.2 Implement the WWMP prepared in accordance with AO17.1.	
BSC assets		
PO18 Structures and buildings do not adversely impact on BSC infrastructure.	**AO18.1** All proposed structures and buildings are clear of BSC easements and underground infrastructure within the site boundaries, as per Queensland Development Code requirements. **AO18.2** All invert crossing(s) and driveways are clear of all gully pits, street lights, power poles and other infrastructure located within the road reserve with a minimum separation distance of 1m.	**Complies:** The site office will be constructed to ensure it is clear of underground infrastructure in accordance with QDC requirements.
Development location in a Bushfire Hazard Area		
PO19 A vulnerable use is not established or materially intensified where there are unacceptable risks to people or property from a Bushfire Hazard.	**AO19** Vulnerable uses are not established or expanded. Editor's note—**Vulnerable uses** are those involving: (1) the accommodation or congregation of vulnerable sectors of the community such as child care centres, community care centre, educational establishments, detention facilities, hospitals, rooming accommodation, retirement facilities or residential care facilities; or (2) the provision of essential services including community uses, emergency services, utility installation,	**Complies:** The proposed development is for an Extractive Industry and does not involve a vulnerable use. It is noted that the proposed use is not sensitive to bushfire impacts, and any buildings/structures associated with the proposed use are located entirely outside of areas identified as potential bushfire hazard.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	telecommunications facility, substations and major electricity infrastructure.	
PO20 Emergency services and uses providing community support services are able to function effectively during and immediately after a bushfire hazard event.	**AO20** Emergency services and uses providing community support services are not located in a bushfire hazard (bushfire prone) area and have direct access to low hazard evacuation routes.	**N/A:** The proposed development does not involve an emergency service or community support services.
PO21 Development involving hazardous materials manufactured or stored in bulk is not located in bushfire prone area.	**AO21** The manufacture or storage of hazardous material in bulk does not occur within a bushfire prone area.	**Complies:** The diesel storage area will be located outside of identified bushfire prone areas.
PO22 Development in a bushfire prone area as identified on SPP mapping – Safety and Resilience to Hazards, Bushfire prone area makes adequate provision of water supply for fire-fighting requirements.	**AO22** No acceptable outcome is prescribed	**Complies:** The proposed development is for an Extractive Industry which is not sensitive to bushfire impacts, and any buildings/structures associated with the proposed use are located entirely outside of areas identified as potential bushfire hazard.
Development located in a Flood Hazard Area – Reconfiguring a Lot		
PO23 Development located within areas containing a flood hazard (as identified in Schedule 4 – Flood hazard overlay map) responds to flooding potential and maintains personal safety at all times, with regard to siting and layout.	**AO23** Development on land identified as flood hazard on the flood hazard maps (as identified in Schedule 4 – Flood hazard overlay map is sited and designed so that: (a) all new lots contain a building envelope located: (i) outside of the mapped flood area in Schedule 4 – Flood hazard overlay map; or (ii) can achieve a freeboard of 300mm above the Defined Flood Event (DFE). (b) there is at least one (1) evacuation route that achieves safe egress for emergency evacuations during all floods.	**N/A:** The proposed development does not involve Reconfiguring a Lot.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
PO24 Development involving essential community infrastructure remains functional to meet community needs during and after flood events.	**AO24** No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve Reconfiguring a Lot.
Stock Route Network		
PO25 Development on or lots fronting the stock route network SPP mapping – Economic Growth, Agriculture, Stock Route Network does not compromise the connectivity and integrity of the network and protects ongoing, efficient and safe use by travelling stock by: • maintaining the extent of the stock route network. • maintaining access to watering facilities and other stock route infrastructure. • providing safe passage of stock traversing the stock route. • allowing practical solutions for stock to move across transport and other linear infrastructure safely.	**AO25** No acceptable outcome is prescribed.	**Complies:** The proposed development does not adversely impact on the stock route network.
PO26 Development does not result in encroachment by incompatible land uses (especially residential, sensitive commercial or community uses) along the stock route network. Non-rural uses are setback and buffered from the stock route network to mitigate impacts.	**AO26** Development is for a rural activity.	**Complies:** The proposed development does not adversely impact on the stock route network.
PO27 Development does not result in a loss of the primary use for moving stock and other uses associated with the stock route network including recreational, environmental and heritage values.	**AO27** No acceptable outcome is prescribed.	**Complies:** The proposed development does not adversely impact on the stock route network.

precinct URBAN PLANNING

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
Petroleum pipeline		
PO28 The integrity and function of high pressure pipelines carrying petroleum and gas is maintained.	**AO28.1** Development: (a) is located not less than 200m from petroleum pipelines and the centre-line of petroleum pipeline easements identified in SPP Mapping – Hazards and Safety – Emissions and Hazardous Activities – High pressure gas pipelines. (b) must not impact on the pipeline function. **AO28.2** Where development is proposed on a pipeline easement, the proponent consults the pipeline licence holder.	**Complies:** The subject site is impacted by a high pressure gas pipeline. In this respect, the development site area is located in excess of 200m from the pipeline and will not conflict with the petroleum infrastructure. **N/A:** The proposed development is not located over a pipeline easement.
Electricity infrastructure		
PO29 Development is separated from major electricity infrastructure or substations and incorporates buffers to maintain public health and safety, residential amenity and allow access to infrastructure for maintenance.	**AO29** No acceptable outcome is prescribed.	**Complies:** The subject land is well separated from any major electricity infrastructure and substations.
Local heritage places		
PO30 Development contributes to the retention of a local heritage place, facilitates their adaptive reuse, but does not result in a change that is incompatible with conserving the cultural heritage significance of the place.	**AO30.1** Development retains the fabric, features and contents listed as significant for the local heritage place and requires no building or operational work in relation to it; OR	**N/A:** There are no local heritage places on the subject site or surrounding lands.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	Development is in accordance with the guideline *Developing heritage places: using the development criteria as made under* the *Queensland Heritage Act 1992*; OR Development is undertaken in accordance with an exemption certificate issued under the *Queensland Heritage Act 1992*. **AO30.2** Development neither results in the demolition of the place nor substantially reduces its cultural heritage significance. Alternatively, where demolition is unavoidable: (a) a report is provided that demonstrates there is no practical reason and feasible alternative to the substantial demolition of the local heritage place or its removal to another location; and (b) an archival record is prepared to document the changes. Editor's note— the report must be prepared by suitably qualified consultants, such as conservation architects or structural engineers, and detail alternative options investigated.	
Biodiversity		
PO31 Development: (a) is located to avoid significant adverse impacts on matters of state environmental significance	**AO31** Provide a buffer from buildings, ancillary structures and all other development:	**Complies:** The proposed development will not adversely impact on areas of identified environmental significance.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
(b) facilitates the protection and enhancement of matters of state environmental significance (c) protects and enhances ecological connectivity.	(a) that is at least 100m from the top bank of all water courses and the full supply level of storages. (b) for areas identified as a Matter of State Environmental significance (identified in SPP mapping – Environment and Heritage – Biodiversity) at a minimum width of: (i) 20m from existing riparian vegetation associated with a watercourse; and (ii) 50m where the area is located in the Township zone; or (iii) 200m in any other zone.	
Aviation facilities		
PO32 Development does not interfere with the function of air service facilities SPP mapping – Infrastructure – Strategic Airport and Aviation Facilities.	**AO32** Development located within the building restriction area for an air services facility does not create: (a) permanent or temporary physical obstructions in the line of sight between antennas. (b) an electrical or electromagnetic field that interferes with the signals transmitted by the facility. (c) reflective surfaces that could deflect or interfere with signals transmitted by the facility. OR Development located within the building restriction area for an air services facility is designed and constructed to mitigate adverse impacts on the function of the facility. OR Development complies with this outcome where written confirmation from Air Services Australia confirms	**Complies:** The proposed development is not located in the vicinity of an airport or aviation facility and will not penetrate obstacle limitation surfaces or interfere with aviation or aerial navigation facilities.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	that the development will not impair the functioning of the air services facility.	
Home based business		
PO33 The development comprises only a minor portion of an existing residential premise.	**AO33.1** The business is operated by persons residing in the dwelling. **AO33.2** The development is limited to a total floor area of 80m² for the part of the residential premises used in the operation of the business (excluding site parking).	**N/A:** The proposed development does not involve a Home Based Business.
PO34 The use does not generate greater traffic loads than reasonably associated with residential premises.	**AO34.1** Provision is made for two (2) off-street car parking spaces. **AO34.2** The business will not require street parking for more than one (1) additional motor vehicle at any one time, on any street with frontage to the premises. **AO34.3** Delivery motor vehicles visiting the premises shall before more than four (4) tonnes in weight.	**N/A:** The proposed development does not involve a Home Based Business.
PO35 The use is operated in such a way as to not disrupt the residential amenity of the area.	**AO35.1** Delivery of goods and operating hours occurs between the hours of 7:00am and 6:00pm. **AO35.2** The business does not display goods for sale in any window or outdoor area.	**N/A:** The proposed development does not involve a Home Based Business.

Balonne Shire Planning Scheme 2019

General Development Code

Performance outcomes	Acceptable outcomes	Compliance summary
	AO35.3 The one advertising sign associated with the business does not exceed 0.5m² and displays the name of the business operator, name of the business and the phone number. The sign is to be located on the site at a height no greater than 1.5m measured to the bottom of the sign. The sign is not to be illuminated.	
Abandoned mines		
PO36 Development is located to protect sensitive land uses from the impacts of previous activities that may cause risk to people or property including land containing former mining activities and hazards e.g. disused underground mines, tunnels and shafts. Note: A geotechnical assessment report prepared by a suitably qualified and experienced person will assist in demonstrating the achievement of the performance outcome where a possible risk from former mining activities is identified through location knowledge, a pre-development ground inspection, Schedule 4 – Online Mapping Resources – Mines Online Maps, or other sources.	**AO36** No acceptable outcome is prescribed.	**N/A:** The proposed development is for an Extractive Industry and is located in the Rural Zone.

APPENDIX B – STRATEGIC FRAMEWORK

BALONNE SHIRE PLANNING SCHEME 2019 – STRATEGIC FRAMEWORK		
Theme/Element	**Relevance Yes/No**	**Assessment**
3.2 STRATEGIC INTENT – ENCOURAGING PROSPERITY IN THE SHIRE		
3.2.1 ENCOURAGING ECONOMIC GROWTH		
3.2.1.1 Agriculture	Yes	The proposed development is for an Extractive Industry within a rural area. The proposal involves an increase in the scale and intensity of an existing use, on land which is not suitable for horticulture. The activity will not fragment or result in the permanent alienation of land from future productive agricultural use.
3.2.1.2 Tourism	Yes	Tourism depends largely on an appropriate standard of accessibility and road maintenance. The materials derived from the extractive operation are scare and needed for road construction and maintenance purposes. Accordingly, the proposed development contributes directly and indirectly to the economic prosperity of the region.
3.2.1.3 Resources	Yes	The proposed development is directly engaged in the resources sector providing material critical to road construction and maintenance. The protection and orderly and planned utilisation of such resources is wholly consistent with the intent of the Strategic Framework which purposefully offers protection to such activities.
3.2.2 SUPPORTING RURAL AND SMALL-TOWN LIVING		
3.2.2.1 St George	No	These outcomes relate principally to the encouraging rural living and an appropriate standard of amenity and services within the Shire's small towns.
3.2.2.2 Dirranbandi	No	These outcomes relate principally to the encouraging rural living and an appropriate standard of amenity and services within the Shire's small towns.
3.2.2.3 Bollon	No	These outcomes relate principally to the encouraging rural living and an appropriate standard of amenity and services within the Shire's small towns.
3.2.2.4 Thallon	No	These outcomes relate principally to the encouraging rural living and an appropriate standard of amenity and services within the Shire's small towns.
3.2.2.4 Mungindi	No	These outcomes relate principally to the encouraging rural living and an appropriate standard of amenity and services within the Shire's small towns.
3.2.2.4 Hebel	No	These outcomes relate principally to the encouraging rural living and an appropriate standard of amenity and services within the Shire's small towns.

BALONNE SHIRE PLANNING SCHEME 2019 – STRATEGIC FRAMEWORK		
Theme/Element	**Relevance Yes/No**	**Assessment**
3.2.3 AVOIDING THE IMPACTS OF NATURAL AND OTHER HAZARDS		
3.2.3.1 Flooding	Yes	This outcome deals with ensuring development is sensitive to the impacts of flooding and that an appropriate level of flood immunity is maintained. Only a small part of the site is affected by the flood hazard overlay, and this area is remote form the development site.
3.2.3.2 Bushfire	No	The development site area is suitably separated from identified bushfire prone areas.
3.2.3.3 Emissions and Hazardous Activities	No	
3.2.4 SAFEGUARDING OUR ENVIRONMENT AND HERITAGE		
3.2.4.1 Waterways	Yes	This outcome seeks to protect the Shire's waterways to maintain an appropriate level of water availability and quality. Stormwater management measures are proposed to ensure stormwater quantity and quality is maintained. The proposed development will not result in any degradation of surrounding waterways.
3.2.4.2 Biodiversity	No	
3.2.4.3 Cultural Heritage	No	
3.2.5 PROVIDING APPROPRIATE INFRASTRUCTURE		
3.2.5.1 Roads	Yes	This outcome specifically recognises the value and importance of protecting extractive resources to allow for the orderly and planned extraction of materials, particularly those related to road construction and maintenance. The proposed use will directly support road construction and maintenance in the region.
3.2.5.2 Rail	No	
3.2.5.3 Air	No	
3.2.5.4 Energy and Communications	No	
3.2.5.5 Town-based Infrastructure	No	

APPENDIX C – ASSESSMENT OF STATE CODES

State code 1: Development in a state-controlled road environment

State Development Assessment Provisions guideline - State Code 1: Development in a state-controlled road environment. This guideline provides direction on how to address State Code 1.

Table 1.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Buildings, structures, infrastructure, services and utilities		
PO1 The location of the development does not create a safety hazard for users of the **state-controlled road.**	**AO1.1** Development is not located in a **state-controlled road**. AND **AO1.2** Development can be maintained without requiring access to a **state-controlled road**.	**Complies:** The proposed development is not located in a State-Controlled Road (SCR). **Complies:** The proposed development can be maintained without requiring access to the SCR.
PO2 The design and construction of the development does not adversely impact the **structural integrity** or physical condition of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** The design and construction of the development will not adversely impact the structural integrity or physical condition of State-controlled Road network; reference is made to the Traffic Impact Assessment attached at **Appendix H**.
PO3 The location of the development does not obstruct **road transport infrastructure** or adversely impact the operating performance of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** The location of the development will not obstruct road infrastructure or operating performance of the state-controlled road; reference is made to the Traffic Impact Assessment attached at **Appendix H**.
PO4 The location, placement, design and operation of advertising devices, visible from the **state-controlled road**, do not create a safety hazard for users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** The proposed development does not involve any advertising devices.

Performance outcomes	Acceptable outcomes	Response
PO5 The design and construction of buildings and **structures** does not create a safety hazard by distracting users of the **state-controlled road**.	**AO5.1** Facades of buildings and **structures** fronting the **state-controlled road** are made of non-reflective materials. AND **AO5.2** Facades of buildings and **structures** do not direct or reflect point light sources into the face of oncoming traffic on the **state-controlled road**. AND **AO5.3** External lighting of buildings and **structures** is not directed into the face of oncoming traffic on the **state-controlled road**. AND **AO5.4** External lighting of buildings and **structures** does not involve flashing or laser lights.	**Complies:** The façade of the office building / structures will be made of non-reflective materials. Notwithstanding, the development site area will not easily be viewed from the State-controlled Road. **Complies:** Refer to response at AO5.1. **Complies:** Lighting will be installed to ensure it is not directed into oncoming traffic. Notwithstanding, the development site area will not easily be viewed from the State-controlled Road. **Complies:** Lighting associated with the development will not involve flashing or laser lights.
PO6 Road, pedestrian and bikeway bridges over a **state-controlled road** are designed and constructed to prevent projectiles from being thrown onto the **state-controlled road**.	**AO6.1** Road, pedestrian and bikeway bridges over the **state-controlled road** include throw protection screens in accordance with section 4.11 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2020.	**N/A:** The proposed development does not involve road, pedestrian, or bikeway bridges over a SCR.
Landscaping		
PO7 The location of landscaping does not create a safety hazard for users of the **state-controlled road**.	**AO7.1** Landscaping is not located in a **state-controlled road**. AND **AO7.2** Landscaping can be maintained without requiring access to a **state-controlled road**.	**N/A:** The proposed development does not involve landscaping. **N/A:** Refer to the response to AO7.1.

Performance outcomes	Acceptable outcomes	Response
	AND **AO7.3** Landscaping does not block or obscure the sight lines for vehicular access to a **state-controlled road**.	**N/A:** Refer to the response to AO7.1.
Stormwater and overland flow		
PO8 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.
PO9 Stormwater run-off or overland flow from the development site does not result in a material worsening of the operating performance of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.
PO10 Stormwater run-off or overland flow from the development site does not adversely impact the **structural integrity** or physical condition of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.
PO11 Development ensures that stormwater is lawfully discharged.	**AO11.1** Development does not create any new points of discharge to a **state-controlled road.** AND **AO11.2** Development does not concentrate flows to a **state-controlled road**. AND **AO11.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.

Performance outcomes	Acceptable outcomes	Response
	AO11.4 Development does not worsen the condition of an existing **lawful point of discharge** to the **state-controlled road**.	
Flooding		
PO12 Development does not result in a material worsening of flooding impacts within a **state-controlled road**.	**AO12.1** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (within +/- 10mm) to existing flood levels within a **state-controlled road**. AND **AO12.2** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing peak velocities within a **state-controlled road**. AND **AO12.3** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing time of submergence of a **state-controlled road**.	**Complies:** The development site and existing access arrangement are located outside flood hazard areas on the Planning Scheme's Flood Hazard Overlay mapping. It is considered the development will not result in a material worsening of flooding impacts within the state transport corridor. **Complies:** Refer to the response to AO12.1. **Complies:** Refer to the response to AO12.1.
Drainage Infrastructure		
PO13 Drainage infrastructure does not create a safety hazard for users in the **state-controlled road**.	**AO13.1** Drainage infrastructure is wholly contained within the development site, except at the **lawful point of discharge**. AND	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.

Performance outcomes	Acceptable outcomes	Response
	AO13.2 Drainage infrastructure can be maintained without requiring access to a **state-controlled road**.	**Complies:** Refer to the response to AO13.1.
PO14 Drainage infrastructure associated with, or within, a **state-controlled road** is constructed, and designed to ensure the **structural integrity** and physical condition of existing drainage infrastructure and the surrounding drainage network.	No acceptable outcome is prescribed.	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.

Table 1.2 Vehicular access, road layout and local roads

Performance outcomes	Acceptable outcomes	Response
Vehicular access to a state-controlled road or within 100 metres of a state-controlled road intersection		
PO15 The location, design and operation of a **new or changed access** to a **state-controlled road** does not compromise the safety of users of the **state-controlled road**.	No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve new or changed access. The proposed development will utilise the existing access arrangement to the Balonne Highway.
PO16 The location, design and operation of a **new or changed access** does not adversely impact the **functional requirements** of the **state-controlled road**.	No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve new or changed access. The proposed development will utilise the existing access arrangement to the Balonne Highway.
PO17 The location, design and operation of a **new or changed access** is consistent with the **future intent** of the **state-controlled road**.	No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve new or changed access. The proposed development will utilise the existing access arrangement to the Balonne Highway.
PO18 New or changed access is consistent with the access for the relevant **limited access road policy**: 1. **LAR 1** where direct access is prohibited; or 2. **LAR 2** where access may be permitted, subject to assessment.	No acceptable outcome is prescribed.	**N/A:** The proposed development does not involve new or changed access. The proposed development will utilise the existing access arrangement to the Balonne Highway.
PO19 New or changed access to a **local road** within 100 metres of an intersection with a **state-**	No acceptable outcome is prescribed.	**N/A:** The subject site does not have frontage to a local road.

Performance outcomes	Acceptable outcomes	Response
controlled road does not compromise the safety of users of the **state-controlled road**.		
PO20 New or changed access to a **local road** within 100 metres of an intersection with a **state-controlled road** does not adversely impact on the operating performance of the intersection.	No acceptable outcome is prescribed.	**N/A:** The subject site does not have frontage to a local road.
Public passenger transport and active transport		
PO21 Development does not compromise the safety of users of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** The subject site is not in proximity to public passenger transport infrastructure, public passenger services or active transport infrastructure.
PO22 Development maintains the ability for people to access **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** The subject site is not in proximity to public passenger transport infrastructure, public passenger services or active transport infrastructure.
PO23 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** The subject site is not in proximity to public passenger transport infrastructure, public passenger services or active transport infrastructure.
PO24 Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** The subject site is not in proximity to public passenger transport infrastructure, public passenger services or active transport infrastructure.

Table 1.3 Network impacts

Performance outcomes	Acceptable outcomes	Response
PO25 Development does not compromise the safety of users of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies:** The proposed development does not compromise the safety of the state-controlled road network. Reference is made to the Traffic Impact Assessment prepared by RMA Engineers and attached at **Appendix H**.
PO26 Development ensures **no net worsening** of the operating performance of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies:** The proposed development does not result in a net worsening of the operating performance of the state-controlled road network. Reference is made to the Traffic Impact

Performance outcomes	Acceptable outcomes	Response
		Assessment prepared by RMA Engineers and attached at **Appendix H**.
PO27 Traffic movements are not directed onto a **state-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment prepared by RMA Engineers and attached at **Appendix H**.
PO28 Development involving haulage exceeding 10,000 tonnes per year does not adversely impact the pavement of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment prepared by RMA Engineers and attached at **Appendix H**.
PO29 Development does not impede delivery of **planned upgrades** of **state-controlled roads**.	No acceptable outcome is prescribed.	**Complies:** From a State and Local Government perspective, there are no planned upgrades in the vicinity of the subject site. Reference is made to the Traffic Impact Assessment prepared by RMA Engineers and attached at **Appendix H**.
PO30 Development does not impede delivery of **corridor improvements** located entirely within the **state-controlled road corridor**.	No acceptable outcome is prescribed.	**Complies:** From a State and Local Government perspective, there are no planned upgrades in the vicinity of the subject site. Reference is made to the Traffic Impact Assessment prepared by RMA Engineers and attached at **Appendix H**.

Table 1.4 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO31 Development does not create a safety hazard for users of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment, prepared by RMA Engineers and attached at **Appendix H**.
PO32 Development does not adversely impact the operating performance of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment, prepared by RMA Engineers and attached at **Appendix H**.
PO33 Development does not undermine, damage or cause subsidence of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment, prepared by RMA Engineers and attached at **Appendix H**. Reference is also made to the Environmental Assessment Report, prepared by Range Environmental Consultants and attached at **Appendix E**.

Performance outcomes	Acceptable outcomes	Response
PO34 Development does not cause ground water disturbance in a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** The proposed development will not cause ground water disturbance in a state-controlled road.
PO35 Excavation, boring, piling, blasting and fill compaction do not adversely impact the physical condition or **structural integrity** of a **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment, prepared by RMA Engineers and attached at **Appendix H**.
PO36 Filling and excavation associated with the construction of **new or changed access** do not compromise the operation or capacity of existing drainage infrastructure for a **state-controlled road.**	No acceptable outcome is prescribed.	**Complies:** Refer to the Traffic Impact Assessment, prepared by RMA Engineers and attached at **Appendix H**.

Table 1.5 Environmental emissions

Statutory note: Where a **state-controlled road** is co-located in the same transport corridor as a railway, the development should instead comply with Environmental emissions in State code 2: Development in a railway environment.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a lot		
Involving the creation of 5 or fewer new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO37 Development minimises free field noise intrusion from a **state-controlled road.**	**AO37.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	**N/A:** The proposed development does not involve Reconfiguring a Lot.

Performance outcomes	Acceptable outcomes	Response
	c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO37.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. OR **AO37.3** Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to the **state-controlled road**.	
Involving the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO38 Reconfiguring a lot minimises free field noise intrusion from a **state-controlled road.**	**AO38.1** Development provides noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.	**N/A:** The proposed development does not involve Reconfiguring a Lot.

Performance outcomes	Acceptable outcomes	Response
	OR **AO38.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a state-controlled road or type 1 multi-modal corridor		
PO39 Development minimises noise intrusion from a **state-controlled road** in **private open space**.	**AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO39.2** Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** by **alternative noise**	**N/A:** The proposed development does not involve a Material Change of Use for an accommodation activity.

Performance outcomes	Acceptable outcomes	Response
	attenuation measures where it is not practical to provide a noise barrier or earth mound.	
PO40 Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from a **state-controlled road** in **habitable rooms** at the facade.	**AO40.1** Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms**; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO40.2** Development (excluding a **relevant residential building** or **relocated building**) achieves the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	**N/A:** The proposed development does not involve a Material Change of Use for an accommodation activity.
PO41 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a Material Change of Use for an accommodation activity.

Performance outcomes	Acceptable outcomes	Response
Above ground floor level requirements (accommodation activity) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO42 Balconies, podiums, and roof decks include: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums, and roof decks.	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a Material Change of Use for an accommodation activity.
PO43 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a Material Change of Use for an accommodation activity.
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO44 Development: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas**; b. in accordance with: i. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.

Performance outcomes	Acceptable outcomes	Response
iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO45 Development involving a **childcare centre** or **educational establishment**: 1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); 3. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 4. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.

Performance outcomes	Acceptable outcomes	Response
PO46 Development involving: 1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** achieves the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.
Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO47 Development involving a **childcare centre** or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from a **state-controlled road** are provided with: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies or elevated **outdoor play areas**.	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.
PO48 Development including: 1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.
Air, light and vibration		

Performance outcomes	Acceptable outcomes	Response
PO49 Private open space, **outdoor education areas** and **outdoor play areas** are protected from air quality impacts from a **state-controlled road**.	**AO49.1** Each dwelling or unit has access to a **private open space** which is shielded from a **state-controlled road** by a building, **solid gap-free fence**, or other **solid gap-free structure**. OR **AO49.2** Each **outdoor education area** and **outdoor play area** is shielded from a **state-controlled road** by a building, **solid gap-free fence,** or other **solid gap-free structure**.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.
PO50 Patient care areas within **hospitals** are protected from vibration impacts from a **state-controlled road** or **type 1 multi-modal corridor**.	**AO50.1 Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1m/s^{1.75}$. AND **AO50.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care area** does not exceed a vibration dose value of $0.4m/s^{1.75}$.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.
PO51 Development is designed and sited to ensure light from infrastructure within, and from users of, a **state-controlled road** or **type 1 multi-modal corridor**, does not: 1. intrude into buildings during night hours (10pm to 6am); 2. create unreasonable disturbance during evening hours (6pm to 10pm).	No acceptable outcomes are prescribed.	**N/A:** The proposed development does not involve a childcare centre, educational establishment or hospital.

Table 1.6: Development in a future state-controlled road environment

Performance outcomes	Acceptable outcomes	Response
PO52 Development does not impede delivery of a **future state-controlled road**.	**AO52.1** Development is not located in a **future state-controlled road**. OR ALL OF THE FOLLOWING APPLY: **AO52.2** Development does not involve filling and excavation of, or material changes to, a **future state-controlled road**. AND **AO52.3** The intensification of lots does not occur within a **future state-controlled road**. AND **AO52.4** Development does not result in the landlocking of parcels once a **future state-controlled road** is delivered.	**N/A:** The proposed development is not located on a future State Controlled Road.
PO53 The location and design of **new or changed access** does not create a safety hazard for users of a **future state-controlled road**.	**AO53.1** Development does not include **new or changed access** to a **future state-controlled road**.	**N/A:** The proposed development is not located on a future State Controlled Road.
PO54 Filling, excavation, building foundations and **retaining structures** do not undermine, damage or cause subsidence of a **future state-controlled road**.	No acceptable outcome is prescribed.	**N/A:** The proposed development is not located on a future State Controlled Road.
PO55 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** The proposed development is not located on a future State Controlled Road.
PO56 Development ensures that stormwater is lawfully discharged.	**AO56.1** Development does not create any new points of discharge to a **future state-controlled road**.	**N/A:** The proposed development is not located on a future State Controlled Road.

Performance outcomes	Acceptable outcomes	Response
	AND **AO56.2** Development does not concentrate flows to a **future state-controlled road**. AND **AO56.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO56.4** Development does not worsen the condition of an existing **lawful point of discharge** to the **future state-controlled road**.	

State code 6: Protection of state transport networks

Table 6.2 Development in general

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO1 Development does not compromise the safety of users of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies:** The development will not compromise the operations or use of the Balonne Highway. A detailed Traffic Impact Assessment has been prepared by RMA Engineers and is attached at **Appendix H.**
PO2 Development does not adversely impact the structural integrity or physical condition of a **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO3 Development ensures **no net worsening** of the operating performance the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO4 Traffic movements are not directed onto a **state-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO5 Development involving haulage exceeding 10,000 tonnes per year does not damage the pavement of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO6 Development does not require a new **railway** level crossing.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO7 Development does not adversely impact the operating performance of an existing **railway crossing**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO8 Development does not adversely impact on the safety of an existing **railway crossing**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO9 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a **railway crossing**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO10 Development does not create a safety hazard within the **railway corridor**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO11 Development does not adversely impact the operating performance of the **railway corridor**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.

Performance outcomes	Acceptable outcomes	Response
PO12 Development does not interfere with or obstruct the **railway transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
PO13 Development does not adversely impact the structural integrity or physical condition of a **railway corridor** or **rail transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO1.
Stormwater and overland flow		
PO14 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of a **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** A detailed Stormwater Management Plan has been prepared by RMA Engineers and is attached at **Appendix G.**
PO15 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of a **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO14.
PO16 Stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** Refer to the response to PO14.
PO17 Development associated with a **state-controlled road** or **road transport infrastructure** ensures that stormwater is lawfully discharged.	**AO17.1** Development does not create any new points of discharge to a **state transport corridor** or **state transport infrastructure**. AND **AO17.2** Development does not concentrate flows to a **state transport corridor**. AND **AO17.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND	**Complies:** Refer to the response to PO14.

Performance outcomes	Acceptable outcomes	Response
	AO17.4 Development does not worsen the condition of an existing **lawful point of discharge** to a **state transport corridor** or **state transport infrastructure**.	**Complies:** Refer to the response to PO14.
Flooding		
PO18 Development does not result in a material worsening of flooding impacts within a **state transport corridor** or **state transport infrastructure**	*For a **state-controlled road** or **road transport infrastructure**, all of the following apply:* **AO18.1** For all flood events up to 1% **annual exceedance probability**, development ensures there are negligible impacts (within +/- 10mm) to existing flood levels within a **state transport corridor**. AND **AO18.2** For all flood events up to 1% **annual exceedance probability**, development ensures there are negligible impacts (up to a 10% increase) to existing peak velocities within a **state transport corridor**. AND **AO18.3** For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing time of submergence of a **state transport corridor**. *No acceptable outcome is prescribed for a **railway corridor** or **rail transport infrastructure**.*	**Complies:** The development site and existing access arrangement are located outside flood hazard areas on the Planning Scheme's Flood Hazard Overlay mapping. It is considered the development will not result in a material worsening of flooding impacts within the state transport corridor. **Complies:** Refer to the response to AO18.1. **Complies:** Refer to the response to AO18.1.
Drainage infrastructure		
PO19 Drainage infrastructure does not create a safety hazard in a **state transport corridor**.	*For a **state-controlled road** environment, both of the following apply:* **AO19.1** Drainage infrastructure associated with, or in a **state-controlled road** is wholly contained	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.

Performance outcomes	Acceptable outcomes	Response
	within the development site, except at the **lawful point of discharge**. AND **AO19.2** Drainage infrastructure can be maintained without requiring access to a **state transport corridor**. *For a **railway** environment both of the following apply:* **AO19.3** Drainage infrastructure associated with a **railway corridor** or **rail transport infrastructure** is wholly contained within the development site. AND **AO19.4** Drainage infrastructure can be maintained without requiring access to a **state transport corridor**.	**Complies:** Refer to the response to AO19.1. **N/A:** The proposed development is not in proximity to a railway corridor. **N/A**
PO20 Drainage infrastructure associated with, or in a **state-controlled road** or **road transport infrastructure** is constructed and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network is maintained.	No acceptable outcome is prescribed.	**Complies:** Reference is made to the Stormwater Management Plan, prepared by RMA Engineers and attached at **Appendix G**.
Planned upgrades		
PO21 Development does not impede delivery of **planned upgrades** of **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies:** From a State and Local Government perspective, there are no planned upgrades in the vicinity of the subject site. Reference is made to the Traffic Impact Assessment prepared by RMA Engineers and attached at **Appendix H**.

Table 6.3 Public passenger transport infrastructure and active transport

Performance outcomes	Acceptable outcomes	Response
PO22 Development does not damage or interfere with **public passenger transport infrastructure**, **active transport infrastructure** or **public passenger services**.	No acceptable outcome is prescribed.	**N/A:** The subject site is not in proximity to public passenger transport infrastructure, public passenger services or active transport infrastructure.
PO23 Development does not compromise the safety of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO24 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO25 Development does not adversely impact the structural integrity or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO26 Upgraded or new **public passenger transport infrastructure** and **active transport infrastructure** is provided to accommodate the demand for **public passenger transport** and **active transport** generated by the development.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO27 Development is designed to ensure the location of **public passenger transport infrastructure** prioritises and enables efficient **public passenger services**.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO28 Development enables the provision or extension of **public passenger services**, **public passenger transport infrastructure** and **active transport infrastructure** to the development and avoids creating indirect or inefficient routes for **public passenger services**.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.

Performance outcomes	Acceptable outcomes	Response
PO29 New or modified road networks are designed to enable development to be serviced by **public passenger services**.	**AO29.1** Roads catering for buses are arterial or **sub-arterial roads**, collector or their equivalent. AND **AO29.2** Roads intended to accommodate buses are designed and constructed in accordance with: 1. Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design; Department of Transport and Main Roads; 2. Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6), Department of Transport and Main Roads; 3. Austroads Guide to Road Design (Parts 3, 4-4C and 6); 4. Austroads Design Vehicles and Turning Path Templates; 5. Queensland Manual of Uniform Traffic Control Devices, Part 13: Local Area Traffic Management and AS 1742.13-2009 Manual of Uniform Traffic Control Devices – Local Area Traffic Management; AND **AO29.3** Traffic calming devices are not installed on roads used for buses in accordance with section 2.3.2 Bus Route Infrastructure, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	**N/A:** Refer to the response to PO22.
PO30 Development provides safe, direct and convenient access to existing and future **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO31 On-site vehicular circulation ensures the safety of both **public passenger transport services** and pedestrians.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.

Performance outcomes	Acceptable outcomes	Response
PO32 Taxi facilities are provided to accommodate the demand generated by the development.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO33 Facilities are provided to accommodate the demand generated by the development for community transport services, courtesy transport services, and **booked hire services** other than taxis.	No acceptable outcome is prescribed.	**N/A:** Refer to the response to PO22.
PO34 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.	**AO34.1** A **taxi facility** is provided parallel to the kerb and adjacent to the main entrance. AND **AO34.2 Taxi facilities** are designed in accordance with: 1. AS2890.5–1993 Parking facilities – on-street parking and AS1428.1–2009 Design for access and mobility – general requirements for access – new building work; 2. AS1742.11–1999 Parking controls – manual of uniform traffic control devices 3. AS/NZS 2890.6–2009 Parking facilities –off street parking for people with disabilities; 4. Disability standards for accessible public 5. transport 2002 made under section 31(1) of the Disability Discrimination Act 1992; 6. AS/NZS 1158.3.1 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting – Performance and design requirements; 7. Chapter 7 Taxi Facilities, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	**N/A:** Refer to the response to PO22.
PO35 Educational establishments are designed to ensure the safe and efficient operation of **public passenger services**, pedestrian and cyclist access and **active transport infrastructure**.	**AO35.1** Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.	**N/A:** Refer to the response to PO22.

APPENDIX D – SITE PLANS

Range Environmental Consultants

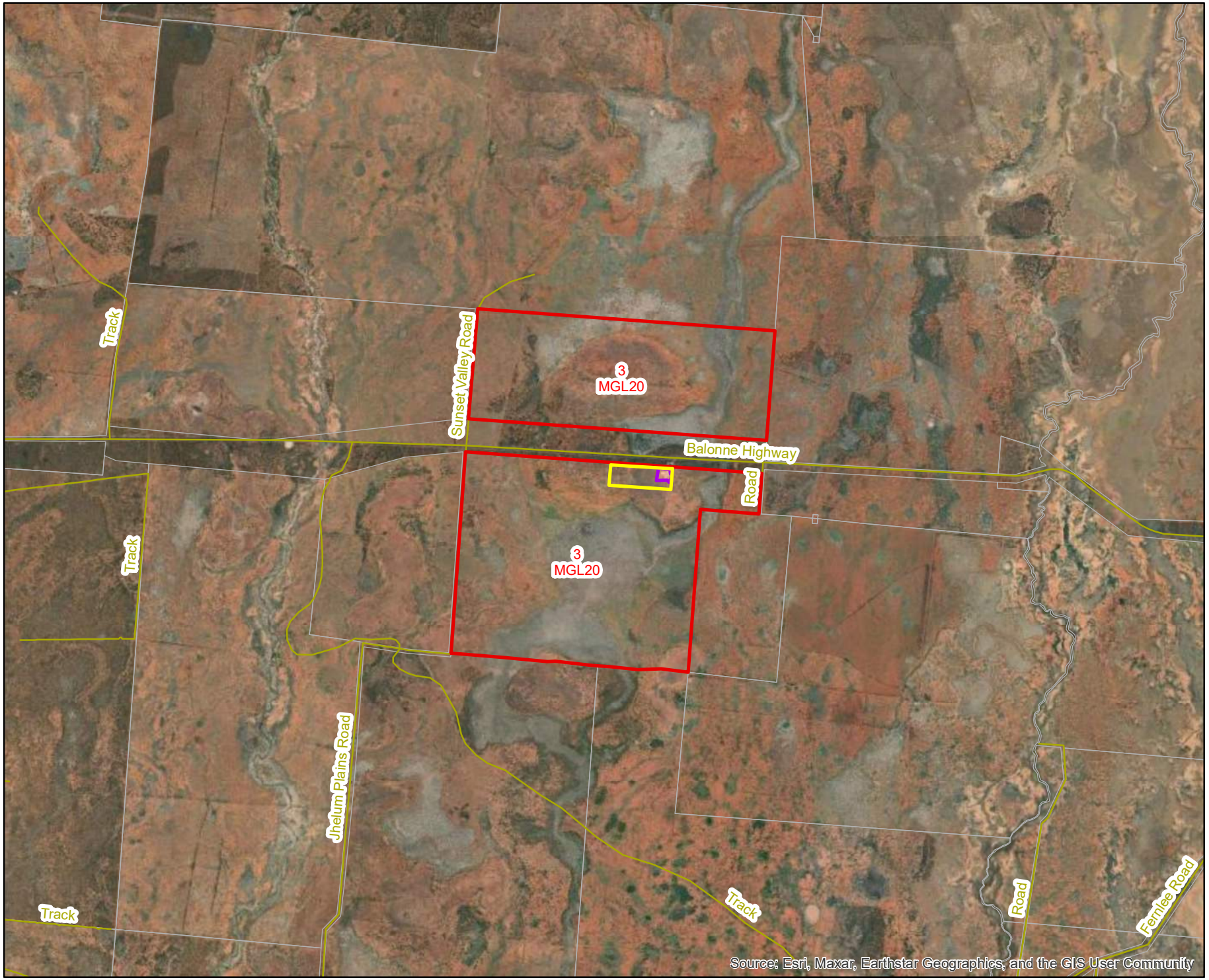


Figure 1
Site Locality

Project: Rockville Pit EA Amendment

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 20/09/2023
Approved by: RJM Date: 20/09/2023

Metres
0 1,600 3,200

Legend

- Cadastre
- Site boundary
- Roads
- Total Extractive Activities Area
- Existing Extractive Activities Area

The content of this document includes third party data. Range Environmental Consultants does not gaurantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2023).

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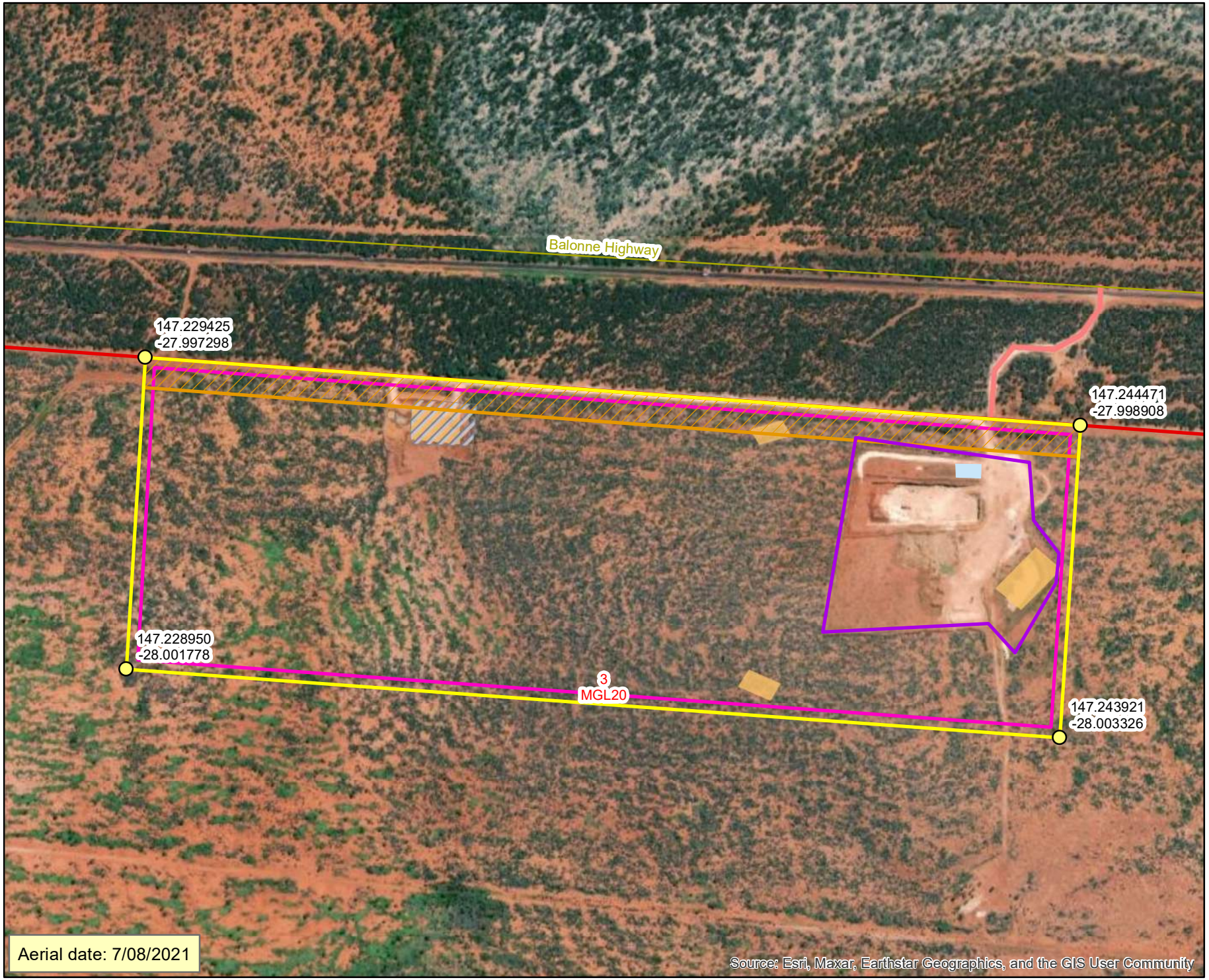

Figure 2
Total Extractive Activities Area

Project: Rockville Pit EA Amendment

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 22/02/2024
Approved by: RJM Date: 22/02/2024

Metres
0 110 220

Legend

- Cadastre
- Roads
- Site boundary
- Total Extractive Activities Area
- Existing Extractive Activities Area
- 50m Wide Extraction Exclusion Zone
- Existing Site
- 15m Wide Access Allowance
- Site office/Diesel AST

Stormwater Infrastructure

- Detention Basin
- Sediment Basin

Source: Cadastral data sourced from DNRME (2023).

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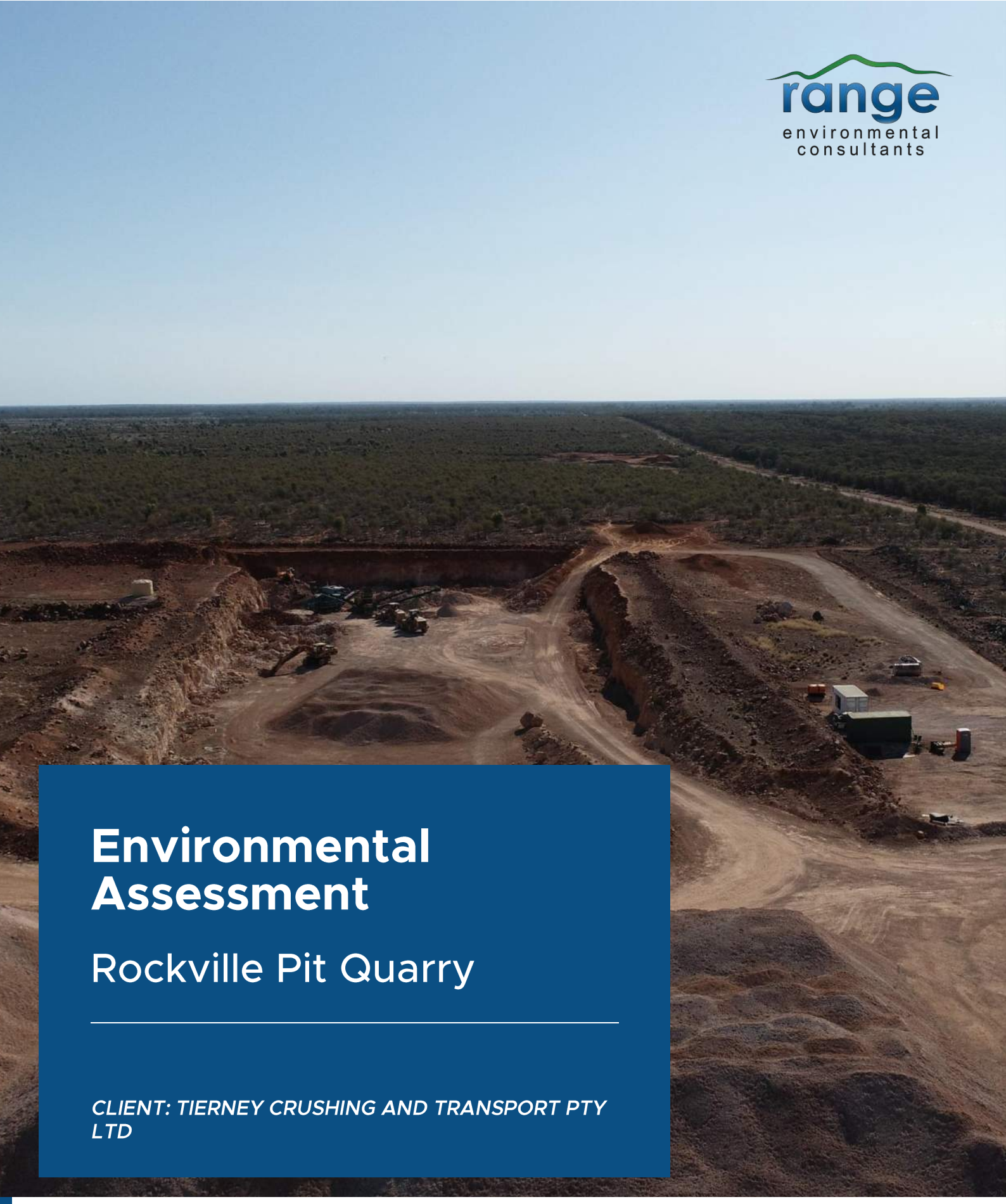
APPENDIX E – ENVIRONMENTAL ASSESSMENT REPORT

Range Environmental Consultants



Environmental Assessment

Rockville Pit Quarry

CLIENT: TIERNEY CRUSHING AND TRANSPORT PTY LTD

PROJECT NO.	**J001483**
STATUS	**FINAL**
DATE	**8/08/2024**

rangeenviro.com.au

Disclaimer

Range Environmental provides this report directly and exclusively to Tierney Crushing and Transport Pty Ltd (the Client) for their sole use and solely for the specific purpose for which it is supplied. This report is not to be distributed to any other party without the consent of Range Environmental and Range Environmental will not be liable to any other entity other than the Client in relation to any matters dealt with in this report. Third parties (including, but not limited to, successors or assigns of the Client) may not rely on anything contained in this report whatsoever. The Client indemnifies Range Environmental against any claim, loss, expense, damage or the like arising from any third party which results from the Client providing this report to that third party without the prior knowledge or consent of Range Environmental.

This report has been prepared based on the information, documentation and representations given by the Client to Range Environmental. The Client releases Range Environmental from any claim for damage, cost, loss, expense or the like which is caused or contributed to by the incorrect, inaccurate, false, misleading, or deceptive information, documentation or representations given by the Client to Range Environmental. The validity and comprehensiveness of any information given by the Client has not been independently verified by Range Environmental and, for the purposes of this report, it is assumed that the information provided to Range Environmental is both complete and accurate.

Where site inspections, testing, surveying, or fieldwork have taken place, this report is based on the site conditions and information made available by the Client or their agents or nominees during the visit, the visual observations, and any subsequent discussions with regulatory authorities. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

The Client acknowledges that this Report and all information and content in it shall at all times be and remain the property of Range Environmental and must not be disclosed to any third party at any time, except with the prior consent of Range Environmental or where the Client is required by statute, rule, regulation, judicial process or in connection with any litigation to which it is a party.

Document Control

Version	Purpose	Lead Author	Reviewer	Approved by	Date
1.	Final Report	MJW	RJM	LMT	10/05/2024
2.	Final Report (Client's comments)	MJW	RJM	LMT	8/08/2024

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Tables

Figures

Appendices

1 Introduction

An environmental assessment was undertaken for Tierney Crushing and Transport Pty Ltd (the applicant) for a proposed expansion to their existing 'Rockville Pit' quarry located at Balonne Highway, Bollon (hereafter 'the site'). The site occurs across a portion of Lot 3 MGL20 (Figure 1).

The proposed quarry expansion includes an increased rate of extraction, screening and crushing activities across an increased quarrying footprint (hereafter 'the total extractive activities area'). There will be no changes to the existing site access.

This environmental assessment was undertaken to support an Environmental Authority (EA) amendment application for the following Environmentally Relevant Activities (ERAs) under EA permit no. EPPR01645113:

- ERA 16 (2)(b) – extracting, other than by dredging, in a year, more than 100,000t but not more than 1,000,000t.
- ERA 16 (3)(b) – screening, in a year, more than 100,000t but not more than 1,000,000t.

This environmental assessment was also prepared to support a Material Change of Use (MCU) development approval (DA) application. The DA application will be prepared by Precinct Urban Planning for submission to Balonne Shire Council.

This environmental assessment was prepared in accordance with:

- *Environmental Protection Act 1994* (EP Act).
- Application requirements for activities with impacts to air, land, noise, water, and waste (DESI Publications ESR/2015/1836 to 1840).
- Application to amend an environmental authority form (ESR/2015/1733), Version 21.02.
- State Development Assessment Provisions (SDAP).
- Balonne Planning Scheme 2019.

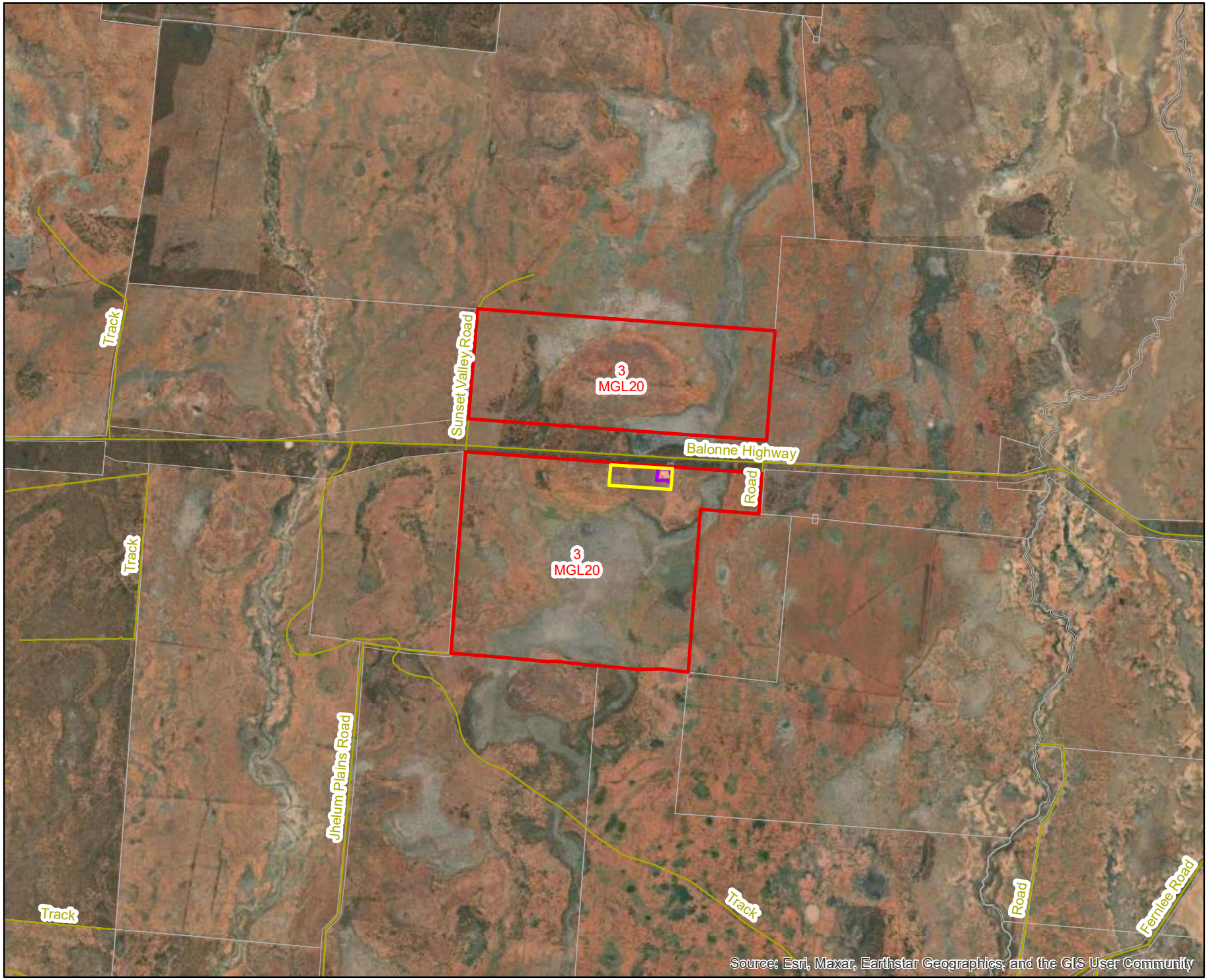

Figure 1
Site Locality

Project: Rockville Pit EA Amendment

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 20/09/2023
Approved by: RJM Date: 20/09/2023

Metres
0 1,600 3,200

Legend

- Cadastre
- Site boundary
- Roads
- Total Extractive Activities Area
- Existing Extractive Activities Area

The content of this document includes third party data. Range Environmental Consultants does not gaurantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2023).

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2 Proposed EA Amendment

Table 1 below details the quarry's existing operations and the changes proposed as a part of the expansion which require the EA amendment and Development Approval. Figure 2 shows the quarry's existing extractive activities area and infrastructure and the proposed total extractive activities area and infrastructure.

Table 1 Proposed Expansion Details

Aspect of Operations	Existing Operations	Proposed Operations
Total extractive activities footprint (**Figure 2**)	• 18.6 ha	• 75.1 ha
ERAs	• ERA 16 (2)(a) – extracting, other than by dredging, in a year, 5000t to 100,000t. • ERA 16 (3)(a) – screening, in a year, 5000t to 100,000t.	• ERA 16 (2)(b) – extracting, other than by dredging, in a year, more than 100,000t but not more than 1,000,000t. • ERA 16 (3)(b) – screening, in a year, more than 100,000t but not more than 1,000,000t.

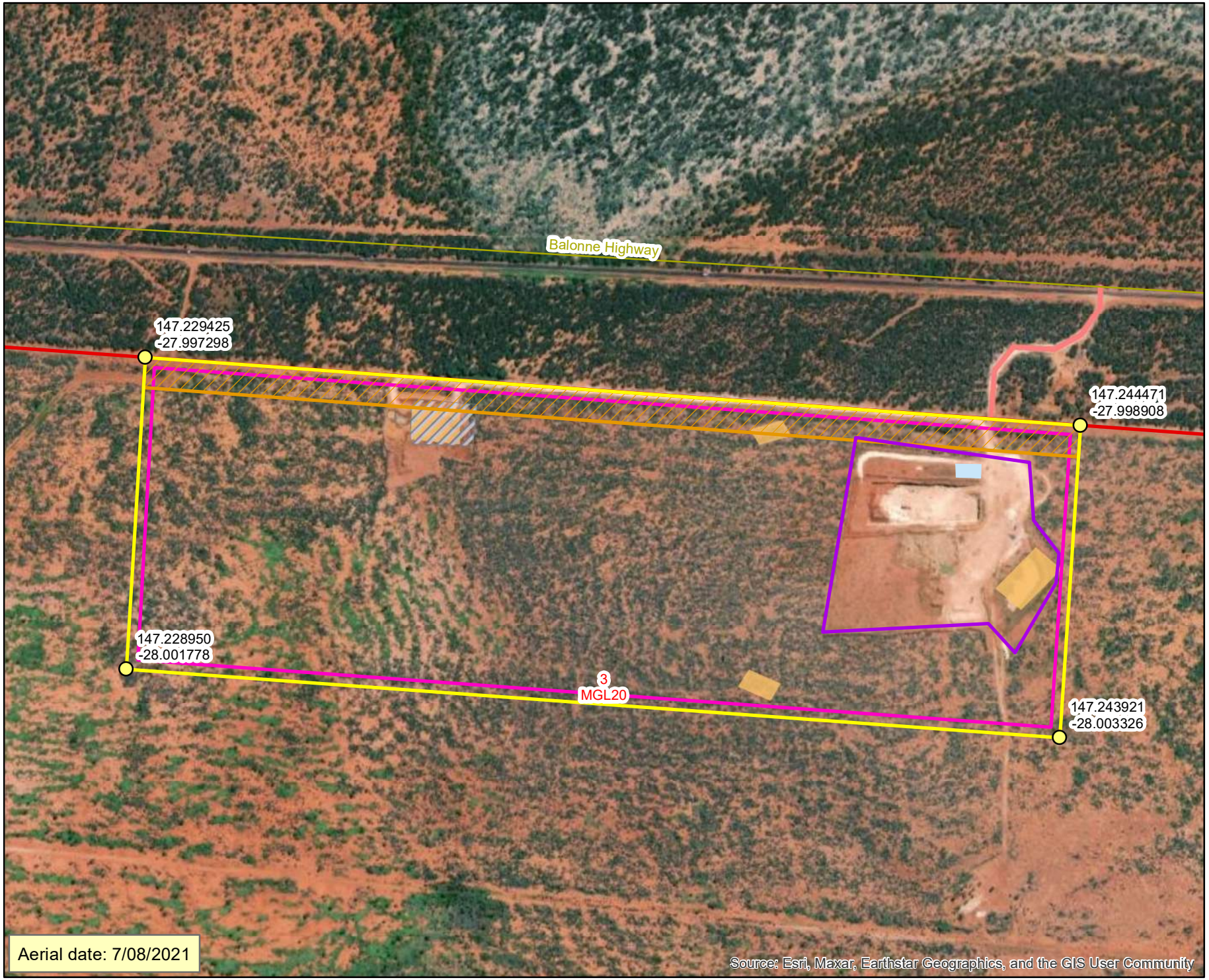

Figure 2
Total Extractive Activities Area

Project: Rockville Pit EA Amendment

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 22/02/2024
Approved by: RJM Date: 22/02/2024

Metres
0 110 220

Legend

- Cadastre
- Roads
- Site boundary
- Total Extractive Activities Area
- Existing Extractive Activities Area
- 50m Wide Extraction Exclusion Zone
- Existing Site
- 15m Wide Access Allowance
- Site office/Diesel AST

Stormwater Infrastructure

- Detention Basin
- Sediment Basin

Source: Cadastral data sourced from DNRME (2023).

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3 Requirements for EA Amendment Applications

3.1 EP Act

This application has been prepared in accordance with Sections 226 and 226A of the EP Act, and as such is a properly made application as required by Chapter 5, Part 7, Division 2 of the EP Act.

The requirements provided in Sections 226 (Table 2) and 226A (Table 3) of the EP Act and determination of a major or minor amendment (Section 3.1.1) are described below.

Table 2 EP Act Section 226 - Requirements for amendment applications generally

Requirements for Amendment Applications	Response
(1) An amendment application must—	
(a) be made to the administering authority; and	A completed application form to amend an environmental authority (ESR/2015/1733 version 22.00) was supplied with this report.
(b) be in the approved form; and	This report was prepared in accordance with Sections 226 and 226A of the EP Act and the Application requirements for activities with impacts to air, land, noise, water, and waste (DESI Publications ESR/2015/1836 to 1840).
(c) be accompanied by the fee prescribed by regulation; and	The application fee for the EA amendment was paid by Tierney Crushing and Transport Pty Ltd on submission of the application.
(d) describe the proposed amendment; and	The proposed quarry expansion includes an increase to the existing extraction footprint and an increase to the rate of extraction, screening and crushing to 300,000t of material in a year.
(e) describe the land that will be affected by the proposed amendment; and	Lot 3 MGL20 is located in a relatively remote area, approximately 21km west of the rural town of Bollon. The proposed total extractive activities area will comprise a 75.1 ha portion of the 4849ha land parcel and will occur in the northern portion of the southern lot extending west from the existing extractive activities area. The remainder of Lot 3 MGL20 is used for grazing.
(f) include any other document relating to the application prescribed by regulation.	Not applicable.
(2) However, subsection (1)(d) and (e) does not apply to an application for a condition conversion.	This application does not relate to a condition conversion.

Table 3 EP Act Section 226A - Assessment against reporting requirements for EA amendment applications

Report Requirement	Section of Report Addressing Requirement
(a) describe any development permits in effect under the Planning Act for carrying out the relevant activity for the authority; and	Section 4.2
(b) state whether each relevant activity will, if the amendment is made, comply with the eligibility criteria for the activity; and	Application form to amend an environmental authority (ESR/2015/1733 version 22.00)
(c) if the application states that each relevant activity will, if the amendment is made, comply with the eligibility criteria for the activity—include a declaration that the statement is correct; and	Application form to amend an environmental authority (ESR/2015/1733 version 22.00)
(d) state whether the application seeks to change a condition identified in the authority as a standard condition; and	Application form to amend an environmental authority (ESR/2015/1733 version 22.00)
(e) if the application relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit—state whether the applicant seeks an amended environmental authority that is subject to the standard conditions for the relevant activity or authority, to the extent it relates to the permit; and	Not applicable
(f) include an assessment of the likely impact of the proposed amendment on the environmental values, including— (i) a description of the environmental values likely to be affected by the proposed amendment; and (ii) details of emissions or releases likely to be generated by the proposed amendment; and (iii) a description of the risk and likely magnitude of impacts on the environmental values; and (iv) details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and (v) if a PRCP schedule does not apply for each relevant activity—details of how the land the subject of the application will be rehabilitated after each relevant activity ends; and	Section 6 Section 7 Section 8 Site Based Management Plan (Reference: J001483)
(g) include a description of the proposed measures for minimising and managing waste generated by amendments to the relevant activity; and	Site Based Management Plan (Reference: J001483)
(h) include details of any site management plan or environmental protection order that relates to the land the subject of the application.	Not applicable
(2) Subsection (1)(f) does not apply for an amendment application for an environmental authority if – (a) either – (i) the process under chapter 3 for an EIS for the proposed amendment has been completed; or (ii) the Coordinator-General has evaluated an EIS for the proposed amendment and there are Coordinator-General's conditions that relate to the proposed amendment; and (b) an assessment of the environmental risk of the proposed amendment would be the same as the assessment in the EIS mentioned in paragraph (a)(I) or the evaluation mentioned in paragraph (a)(ii).	Not applicable

(3) Also, subsection (1) (a), (d), (e), (f), (g) and (h) does not apply to an application for a condition conversion.	Not applicable
(4) Despite subsection (1) (f), (g) and (h), if the amendment application is for an environmental authority for the prescribed ERA mentioned in the *Environmental Protection Regulation 2019*, Schedule 2, Section 13A – (a) it need only include the matters mentioned in subsection (1) (f) (i) to (iv), (g) and (h) to the extent the matters relate to fine sediment, or dissolved inorganic nitrogen, entering the water of the Great Barrier Reef or Great Barrier Reef catchment waters; and (b) subsection (1) (f) (v) does not apply for the amendment application.	Not applicable

3.1.1 Amendment Type Determination

Pursuant to Section 223 of the EP Act, an application to amend an EA may be determined to be a Major Amendment if it meets the definition for a Major Amendment – means an amendment that is not a minor amendment. The amendment is considered to be a major amendment due to the following:

- Is not for a condition conversion.
- Is considered to significantly increase the level of environmental harm caused by the activity due to the larger area of proposed disturbance.
- Significantly increases the scale and intensity of the activity.
- Involves an addition to the surface area for the activity of more than 10% of the existing area.

3.2 EA Amendment Application Form

A completed application form to amend an environmental authority (ESR/2015/1733 version 22.00) was supplied with this report to provide all necessary information for a properly made amendment application.

The following is noted regarding the suitability for standard applications:

- ERA 16 (2)(b) – Not applicable. There are no standard conditions for this ERA threshold.
- ERA 16 (3)(b) – Applicable. It is Range Environmental's understanding that the proposed development meets the standard conditions eligibility criteria (ESR/2015/1703) for ERA 16 (3)(b).

This EA amendment application does not seek to change a condition identified in the authority as a standard condition.

3.3 Development Application

This environmental assessment was also prepared to support a Material Change of Use (MCU) development approval (DA) application. The DA application will be prepared by Precinct Urban Planning for submission to Balonne Shire Council.

3.3.1 State Development Assessment Provisions

The performance outcomes of State Code 22: Environmentally Relevant Activities were incorporated into the environmental assessment. A code response table demonstrating compliance with the performance outcomes of State Code 22 is provided at Appendix A.

3.3.2 Balonne Shire Planning Scheme 2024

The relevant environmental performance outcomes of the Balonne Planning Scheme 2019 were incorporated into the environmental assessment. A code response table demonstrating compliance with the relevant environmental performance outcomes of the Balonne Planning Scheme is provided at Appendix A.

It is noted that the Balonne Shire Planning Scheme fully integrates the relevant parts of the State Planning Policy (SPP) 2017. The planning scheme does rely on SPP mapping for matters outlined in Table SC4.2.1 of the planning scheme.

4 Site Description

4.1 Site Particulars

Details of the site are provided in Table 4 below.

Table 4 Site Particulars

Descriptor	Description
Quarry Operator	Tierney Crushing and Transport Pty Ltd
Existing EA Reference No.	EPPR01645113
Registered Suitable Operator	RSO694087 (Mr Andrew Tierney, Quarry Manager and Owner of Tierney Crushing and Transport Pty Ltd)
Street Address	Rockville Pit, Balonne Highway, Bollon
Real Property Description	Lot 3 MGL20
Site Area	4849 hectares (ha)
Area of Total Extractive Activities Area	74.8 ha
Local Government Area	Balonne Shire Council
Planning Scheme	Balonne Shire Planning Scheme 2024
Land Use Zoning	Rural
Land Use	Existing Rockville Pit quarry and grazing native vegetation

4.2 Existing and Historical Approvals

The site was historically used for flood damage recovery on the Balonne Highway which enabled the site to extract, screen and crush up to 100,000t per annum.

Appendix B shows the following existing and expired approvals for the site's current operations:

- Granted: Environmental Authority (EA) (Reference: EPPR01645113) issued by the Department of Environment and Heritage Protection (DEHP) (now the Department of Environment, Science and Innovation (DESI)).
- Expired: Interim Quarry Registration Certificate (Reference: RQ523), expired 8 April 2021, issued by the Department of Transport and Main Roads (DTMR).

It is understood that a Development Permit was not initially required for the operations as they were commenced under the relevant emergency provisions of the *Planning Act 2016* for flood recovery works.

4.3 Site Condition

Portions of the total extractive activities area were heavily disturbed from the existing quarrying activities at the site. The existing extractive activities area included the existing extraction pit and a dam located in the south-eastern portion. Vegetation within the total extractive activities area and the road reserve of the Balonne Highway (location of existing site access track) were identified as comprising of four (4) vegetation communities (refer to Section 6.1.3.2).

5 Description of Proposed Operations

An overview of the proposed quarry expansion is provided at Table 5 below. A site layout of the total extractive activities area and key infrastructure is provided at Figure 2.

Table 5 Proposed Site Operations

Aspect of Operations	Description
Facility Operator and Applicant	• Tierney Crushing and Transport Pty Ltd
Registered Suitable Operator No. (RSO)	• Andrew Tierney – RSO number 694087
Site	• Lot 3 MGL20
Annual Throughput	• The predicted annual throughput of gravel is up to 300,000t.
ERAs	• ERA 16 (2)(b) – extracting, other than by dredging, in a year, more than 100,000t but not more than 1,000,000t. • ERA 16 (3)(b) – screening, in a year, more than 100,000t but not more than 1,000,000t.
Method of Operations	• Blasting, extracting, crushing, screening, and washing gravel onsite. • The total extractive activities area will have an area of approximately 74.8 ha. • Blasting is proposed to be undertaken approximately three (3) times per year.
Plant, Equipment, and Infrastructure	• Extraction pit. • Stockpile pads. • Detention basin. • Four (4) sediment basins. • Dirty water drains. • Mobile gravel crushing and screening plant and equipment. • Haulage trucks. • Excavators. • Site office. • Diesel storage - 10,000L self-bunded aboveground storage tank (AST).
Hours of operation and staffing	• Three (3) staff members onsite. • Extraction, crushing and screening activities and internal haulage shall be limited to 5:30am to 10:00pm, Monday to Sunday (excluding public holidays). • Drilling activities shall be limited to 7:00am to 6:00pm, Monday to Sunday. • Blasting operations will be limited to 9:00am and 3:00pm, Monday to Friday and between 9:00am and 1:00pm on Saturdays. • Haulage Trucks will be able to access the site from 5:00am to 10:00pm, Monday to Sunday (excluding public holidays). • Servicing of plant/equipment permitted 24/7.

Wastes	• No significant wastes are expected to be generated by the proposed operations.
	  • General wastes from the site office will be stored in bins and removed from site for disposal or recycling as required.
	  • Effluent (Regulated Waste) from staff amenities (black and grey water) will be stored in a holding tank and collected as required by a Regulated Waste Contractor for offsite disposal.
	  • Regulated wastes produced from minor onsite servicing of mechanical plant and equipment will either be removed by the service technicians at the end of the task/day (whichever occurs first) or temporarily stored undercover on a bunded pallet until removal offsite by a regulated waste contractor can occur.
	  • Screened reject material will be retained and utilised in future progressive rehabilitation works for disturbed areas at the site.

6 Environmental Values of the Site and Surrounds

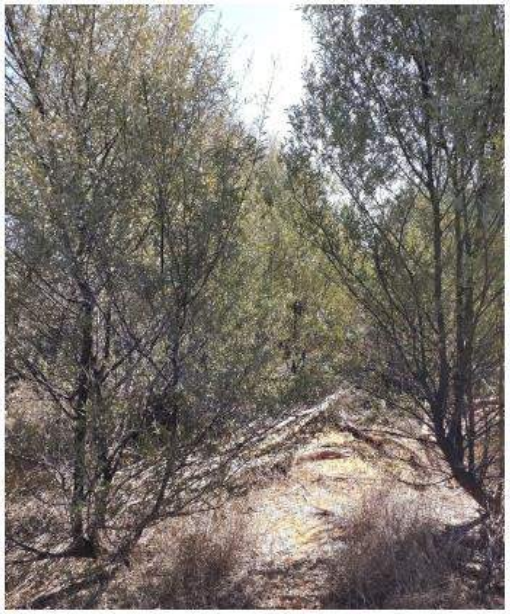
6.1 Biodiversity

The assessment of biodiversity values included a desktop assessment of Local, State and Federal databases and a site inspection to validate the findings of the desktop study.

6.1.1 Site Assessment of Ecological Values

Four (4) quaternary assessments were undertaken at the site by Steve Cupitt of CROSSROADS Rural & Environment Pty Ltd on 5 September 2023 at the locations shown in Figure 3. Photographs and a summary of the findings are provided below in Table 6.

Table 6 Vegetation Communities' Photographs and Descriptions

Vegetation Community	Description	Photographs
Non-Remnant 1 (Category X regrowth vegetation)	**Regional Ecosystem (RE) Details** • Land Zone Description: Old Loamy and Sandy Plains. • Vegetation Type: Regrowth/Suckers. • General Regional Ecosystem (RE) Description: Regrowth *Eucalyptus populnea* and *Acacia aneura* (dominant species). • Canopy & Sub-Canopy Species: No canopy. • Shrub/Understory Species: *Acacia aneura, Eucalyptus populnea* and *Geijera parviflora.* • Groundcover Species: Perennial grasses, including *Aristida sp., Digitaria sp., Panicum, Eregrostis sp., Sid asp., Sclerolaena sp.* and Buffel grass. **Site Survey Observations** • General Condition: Degraded. • Topography: Flat. • Vegetation Structure: Open Shrubland. • RE Condition Assessment: Poor. • Ecologically Dominant Layer (EDL) Height (based on average 5 trees per hectare): 2-5m. • EDL Cover: 50-70%. • Significant Weeds: Prickly Pear and Velvet Tree Pear. • General Observations: Canopy height of approximately 4-5m. Most of the area is covered with regrowth Mulga but there are smaller areas where Poverty Mush	 

	(*Sclerolaena sp.*), grasses and hayed off forbes/herbs dominate. • Habitat Features: Leaf litter, loose bark, small woody debris, and large woody debris. • Vegetation context in the landscape: Provides some function in landscape connectivity for small birds, reptiles, and macropods. • Fire Threat Observations: Moderate.	

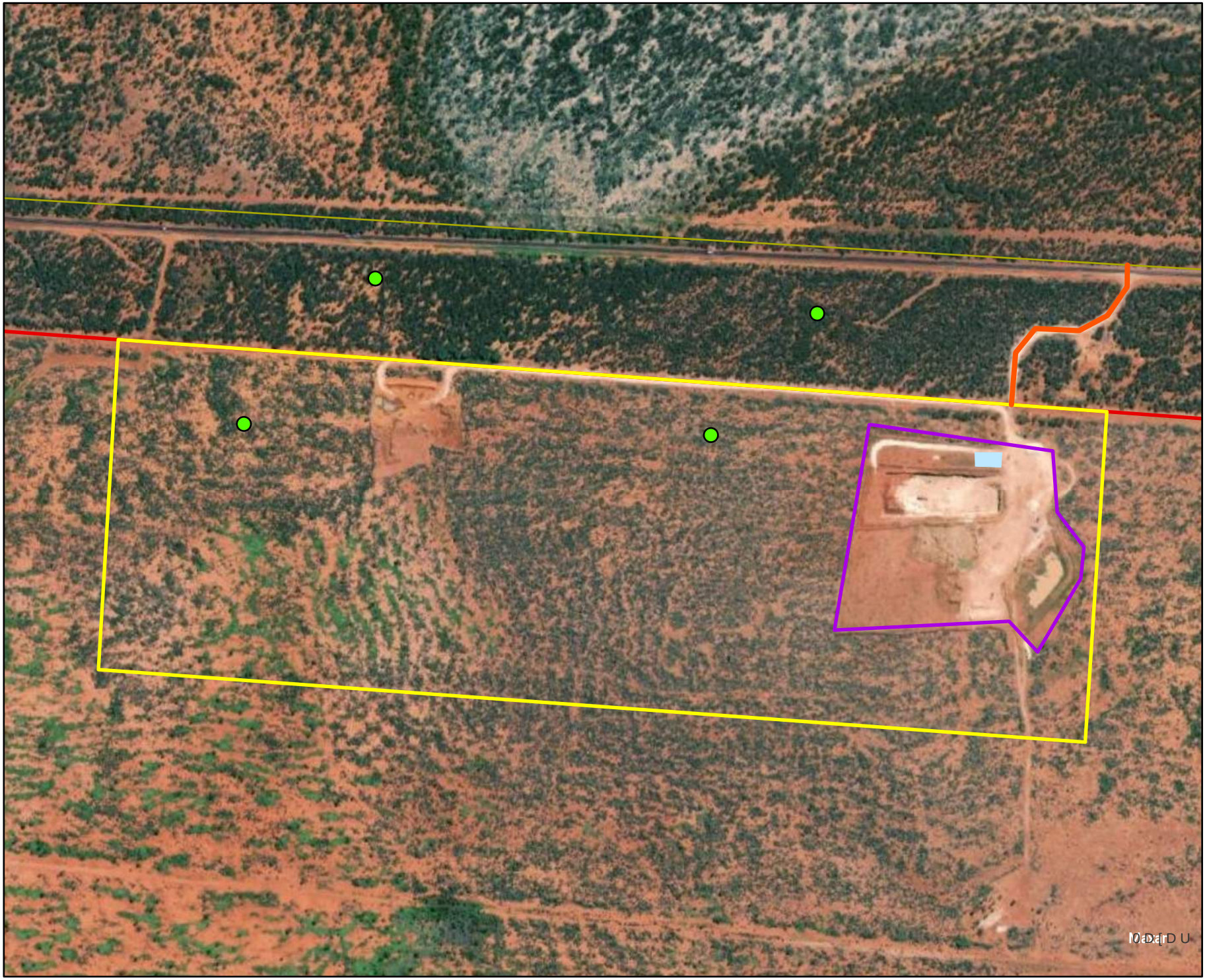
Non-Remnant 2 (Category X regrowth vegetation)	**Regional Ecosystem (RE) Details** • Land Zone Description: Old Loamy and Sandy Plains. • Vegetation Type: Regrowth/Suckers. • General RE Description: Regrowth *Acacia aneura.* • Canopy & Sub-Canopy Species: No canopy. • Shrub/Understory Species: *Acacia aneura* and *Cassinia laevis.* • Groundcover Species: Perennial grasses, including *Aristida sp., Digitaria sp., Panicum, Eregrostis sp., Sid asp., Sclerolaena sp.* and Buffel grass. **Site Survey Observations** • General Condition: Degraded. • Topography: Flat. • Vegetation Structure: Open Shrubland. • RE Condition Assessment: Poor. • EDL Height: 2-5m. • EDL Cover: 50-70%. • Significant Weeds: No weeds observed. • General Observations: Canopy height of approximately 4-5m. Most of the area is covered with regrowth Mulga but there are smaller areas where Poverty Mush (*Sclerolaena sp.*), grasses and hayed off forbes/herbs dominate. • Habitat Features: Leaf litter, loose bark, small woody debris, and large woody debris. • Vegetation context in the landscape: Provides some function in landscape connectivity for small birds, reptiles, and macropods. • Fire Threat Observations: Moderate.	  

Remnant 1 (Mapped as RE 6.5.2)	**Regional Ecosystem (RE) Details** • Land Zone Description: Old Loamy and Sandy Plains. • Vegetation Type: Mapped Remnant. • General RE Description: *Eucalyptus populnea, Acacia aneura* (dominant species), and/or *Eucalyptus melanophloia woodland.* • Canopy & Sub-Canopy Species: *Acacia aneura, Eucalyptus populnea,* and *Corymbia terminalis.* • Shrub/Understory Species: *Acacia aneura, Eucalyptus sp.,* and *Geijera parviflora.* • Groundcover Species: Perennial grasses, including *Aristida sp., Digitaria sp., Panicum, Eregrostis sp., Sid asp., Sclerolaena sp.* and *Solanum sp.* **Site Survey Observations** • General Condition: Good. • Topography: Flat. • Vegetation Structure: Open Woodland. • RE Condition Assessment: Good. • EDL Height: 8-12m. • EDL Cover: 70-100%. • Significant Weeds: Velvet Tree Pear. • General Observations: The RE is showing the effects of drought conditions with all groundcover hayed off. Mulga strongly dominates with very sparse Poplar Box, Western Red Bloodwood and occasional Wilga, Senna, and False Sandalwood in the sub-canopy and/or shrub layers. Structure, floristic diversity, and composition are consistent with RE 6.5.2, however, it could equally be argued that the RE is 6.5.1.	  

	• Habitat Features: Leaf litter, rocks, loose bark, small woody debris, and large woody debris. • Vegetation context in the landscape: Forms an important component of the road corridor and landscape connectivity. • Fire Threat Observations: Low.	

Remnant 2 (Mapped as RE 6.5.2)	**Regional Ecosystem (RE) Details** • Land Zone Description: Old Loamy and Sandy Plains. • Vegetation Type: Mapped Remnant. • General RE Description: *Eucalyptus populnea, Acacia aneura* (dominant species), and/or *Eucalyptus melanophloia woodland.* • Canopy & Sub-Canopy Species: *Acacia aneura, Eucalyptus populnea, Geijera parviflora,* and *Corymbia terminalis.* • Shrub/Understory Species: *Acacia aneura, Eucalyptus sp., Acacia shirlyii,* and *Geijera parviflora.* • Groundcover Species: Perennial grasses, including *Aristida sp., Digitaria sp., Panicum, Eregrostis sp., Sid asp., Sclerolaena sp., Solanum sp.,* Mulga Fern, and Paper Daisy. **Site Survey Observations** • General Condition: Good. • Topography: Flat. • Vegetation Structure: Open Woodland. • RE Condition Assessment: Good. • EDL Height: 8-12m. • EDL Cover: 70-100%. • Significant Weeds: Prickly Pear and Velvet Tree Pear. • General Observations: The RE is showing the effects of drought conditions with all groundcover hayed off. Mulga strongly dominates with very sparse Poplar Box, Western Red Bloodwood and occasional Wilga, Senna, and False Sandalwood in the sub-canopy and/or shrub layers. Structure, floristic diversity, and composition are	  

	consistent with RE 6.5.2, however, it could equally be argued that the RE is 6.5.1. • Habitat Features: Leaf litter, loose bark, small woody debris, and large woody debris. • Vegetation context in the landscape: Forms an important component of the road corridor and landscape connectivity. • Fire Threat Observations: Low.	



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6.1.2 Local Biodiversity Values

Matters of Local Environmental Significance (MLES) are not defined under the Balonne Shire Council Planning Scheme 2024. Instead, it relies on biodiversity mapping for Matters of State Environmental Significance (MSES) under the State Planning Policy. MSES values of the site are described at Section 6.1.3.2. It is noted that there are no MSES mapped by the SPP mapping within the proposed expansion area.

6.1.3 Prescribed Environmental Matters (PEM)

A review was undertaken to identify all PEM of relevance to the proposed facility. Section 10 of the *Environmental Offsets Act 2014* states that PEM include:

- Matters of National Environmental Significance (MNES).
- Matters of State Environmental Significance (MSES).
- Matters of Local Environmental Significance (MLES).

MNES that are PEM are defined at Section 5 of the Environmental Offsets Regulation 2014. MSES that are PEM are defined at Schedule 2 of the Environmental Offsets Regulation 2014. All MNES and MSES that are PEM (as defined in the Environmental Offsets Regulation 2014) were considered in this assessment.

MLES are not PEM as they are explicitly excluded for an Environmental Authority application by Section 16 of the *Application to amend an environmental authority form* and SDAP State Code 22 only applies to MSES.

6.1.3.1 MNES that are PEM

MNES, as described in the *Environmental Protection and Biodiversity Act* (EPBC Act) that are PEM, are defined at Section 5 of the Environmental Offsets Regulation 2014 and include:

- A declared World Heritage property.
- A National Heritage place.
- A declared Ramsar wetland.
- A threatened species.
- A threatened ecological community.
- A migratory species.
- A Commonwealth marine area.
- The Great Barrier Reef Marine Park established under the *Great Barrier Reef Marine Park Act 1975* (Commonwealth).
- A water resource, within the meaning of the *Water Act 2007* (Commonwealth), to the extent the taking of action mentioned in section 24D or 24E of the EPBC Act in relation to the water resource is prohibited under either of those sections.

For brevity the full description and definitions of MNES that are PEM are not provided here. Reference should be made to relevant Commonwealth legislation.

The assessment included an initial analysis of MNES that are PEM to determine their relevance to the proposed quarry expansion (Table 7).

Table 7 Assessment of MNES that are PEM

MNES	Finding	Further assessment required?
A declared World Heritage property	The Protected Matters Search Tool (PMST) search confirmed that there are no declared World Heritage properties at the site or within 5 km of the site (Appendix C).	No
A National Heritage place	The PMST search confirmed that there are no National Heritage places at the site or within 5 km of the site (Appendix C).	No
A declared Ramsar wetland	The PMST search identified three (3) wetlands of International Importance (Ramsar) that occur within 800-1100 km of the site (Appendix C). These included: • Banrock station wetland complex. • Riverland. • The Coorong, Lakes Alexandrina, and Albert wetland. The site survey confirmed that there are no wetlands at or immediately adjoining the total extractive activities area.	No
A threatened species	The PMST identified one (1) listed threatened flora species, 14 threatened fauna species, and 13 listed marine species listed under the EPBC Act are known to occur or may occur at the site or within 5 km (Appendix C). A search of the Wildlife Online database identified no threatened flora species and two (2) threatened fauna species (*Aphelocephala leucopsis* (Southern whiteface) and *Lophochroa leadbeateri leadbeateri* – Major Mitchell's cockatoo) that had been recorded within a 5 km buffer of the site (Appendix C). The site survey identified vegetation within the total extractive activities area as generally degraded. Vegetation within the total extractive activities area generally comprised of regrowth Mulga, with smaller areas of Poverty Mush (*Sclerolaena sp.*), grasses and hayed off forbes/herbs. The site survey confirmed that there was low potential for threatened species or their supporting habitat to occur within the total extractive activities area.	No
A threatened ecological community (TEC)	The PMST search results confirmed that there are no listed TECs that may occur or are known to occur at the site or within the specific search area (Appendix C). Regional Ecosystems identified at the site (RE6.5.2/6.5.1) are not TECs.	No
A migratory species	The PMST search results indicate that habitat for seven (7) migratory species listed under the EPBC Act is known to occur or may occur at the site or within the specific search area (Appendix C). None of these species were recorded on the Wildlife Online database as occurring within a 5 km buffer of the site (Appendix C). Most of these migratory species are marine or wetland species, and the only listed terrestrial species (*Motacilla flava* - Yellow Wagtail) favours wet meadows, marshland, grassy and muddy lakeshores, and occurs in fields (often near livestock) during migration (Cornell University, 2024). Suitable	No

	habitat for the migratory species listed under the EPBC Act by the PMST search does not occur at or immediately adjacent to the total extractive activities area.	
A Commonwealth marine area	The PMST search confirmed that the site is not inside or within 5 km of a Commonwealth marine area (Appendix C). The site is 600 km west of the east coast of Queensland.	No
The Great Barrier Reef Marine Park (GBRMP) established under the *Great Barrier Reef Marine Park Act 1975* (Commonwealth)	The PMST search confirmed that the site is not inside or within 5 km of the GBRMP (Appendix C). The site is located more than 600 km from any GBRMP area.	No
A water resource, within the meaning of the *Water Act 2007* (Commonwealth), to the extent the taking of action mentioned in section 24D or 24E of the EPBC Act in relation to the water resource is prohibited under either of those sections	The operation of the proposed quarry expansion will not involve the take of or interference with a water resource (as defined under the *Water Act 2007* (Commonwealth).	No

6.1.3.2 MSES that are PEM

MSES that are PEM are defined at Schedule 2 of the Environmental Offsets Regulation 2014 and are summarised below:

- Regulated vegetation.
- Connectivity areas.
- Wetlands and watercourses.
- Designated precinct in a strategic environmental area.
- Protected wildlife habitat.
- Protected areas.
- Highly protected zones of State marine parks.
- Fish habitat areas.
- Waterways providing for fish passage.
- Marine plants.
- Legally secured offset areas.

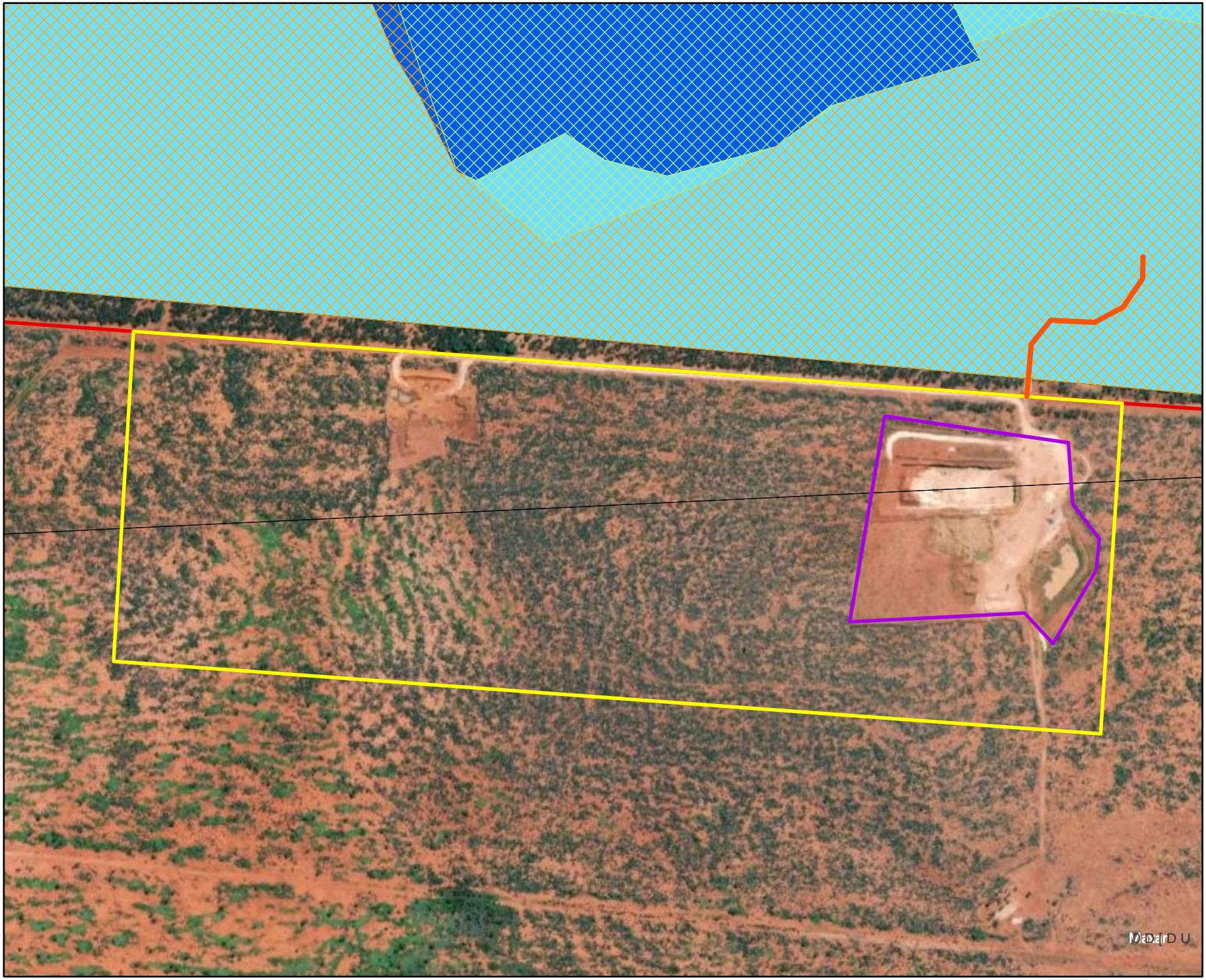
For brevity the full description and definitions of MSES that are PEM are not provided here. Reference should be made to Schedule 2 of the Environmental Offsets Regulation 2014.

The assessment included an initial analysis of MSES that are PEM to determine their relevance to the proposed quarry expansion (Table 8).

Table 8 Assessment of MSES that are PEM

MSES	Finding	Further Assessment Required?
Regulated vegetation	The expansion area does not include a prescribed regional ecosystem. The existing access to the quarrying site will continue to be utilised therefore there will be no impacts to the Category C regrowth vegetation in the road reserve. The Category C regrowth vegetation is not a prescribed regional ecosystem. This PEM is not relevant to the proposed expansion.	No
Connectivity areas	There are no prescribed regional ecosystems that will be impacted from the proposed expansion. Therefore, this PEM is not relevant to the proposed expansion.	No
Wetlands and watercourses	There are no wetlands or watercourses in Wetland Protection Areas, High Ecological Value waters or of High Ecological Significance mapped within the proposed expansion area. The site survey confirmed that no wetlands or watercourses that meet the definition of this PEM occurred in the proposed expansion area. Therefore, this PEM is not relevant to the proposed expansion.	No
Designated precinct in a strategic environmental area	The site and surrounding land are not mapped as a Strategic Environmental Area under the *Regional Planning Interests Act 2014*. Therefore, this PEM is not relevant to the proposed expansion.	No
Protected wildlife habitat	Flora A 'High Risk Area' for protected plants is not mapped within the site or the total extractive activities area (Appendix C). No protected plants were observed within the expansion area during the site assessment. Therefore, this PEM is not relevant to the proposed expansion	No
	Fauna The site is not mapped within a Koala Habitat Area (KHA) under the State Assessment Development Provisions (SDAP) overlays. Therefore, this PEM is not relevant to the proposed expansion	No
	A habitat for an animal that is critically endangered wildlife, endangered wildlife or vulnerable wildlife or a special least concern animal is a matter of State environmental significance. *Tachyglossus aculeatus* (short-beaked echidna), which is defined as a special least concern animal under Schedule 2 of the Environmental Offsets Regulation 2014, inhabit a wide range of terrestrial habitats – including desert, rainforest, open forest, bushland, farmland, and suburban backyards. Therefore, the total extractive activities area may provide suitable habitat for the species.	Yes – for Echidna
Protected areas	The site is not mapped within or adjoining a Protected Area. Narkoola National Park is located 10 km west of the expansion area. Therefore, this PEM is not relevant to the proposed expansion	No
Highly protected zones of State marine parks	State marine parks do not occur at or within 500 m of the total extractive activities area or the site. The nearest State marine park to the site (Moreton Bay Marine Park – Coombabah Lake) is located approximately 597 km east. Therefore, this PEM is not relevant to the proposed expansion	No
Fish habitat areas	A declared Fish Habitat Area (FHA) does not occur at or within 500 m of the total extractive activities area. The	No

	nearest declared FHA to the site (Coombabah) is located approximately 597 km east. Therefore, this PEM is not relevant to the proposed expansion.	
Waterways providing for fish passage	The total extractive activities area and the existing site access point do not include mapped waterways for fish passage under SDAP or any mapped watercourses in QLD Globe (Figure 5). Therefore, this PEM is not relevant to the proposed expansion	
Marine plants	Marine plants do not occur at or within 500 m of the total extractive activities area. The total extractive activities area is located approximately 610 km inland from the east coast of Queensland. Therefore, this PEM is not relevant to the proposed expansion	No
Legally secured offset areas	The site is not mapped within or adjoining a Legally Secured Offset Area. Therefore, this PEM is not relevant to the proposed expansion	No



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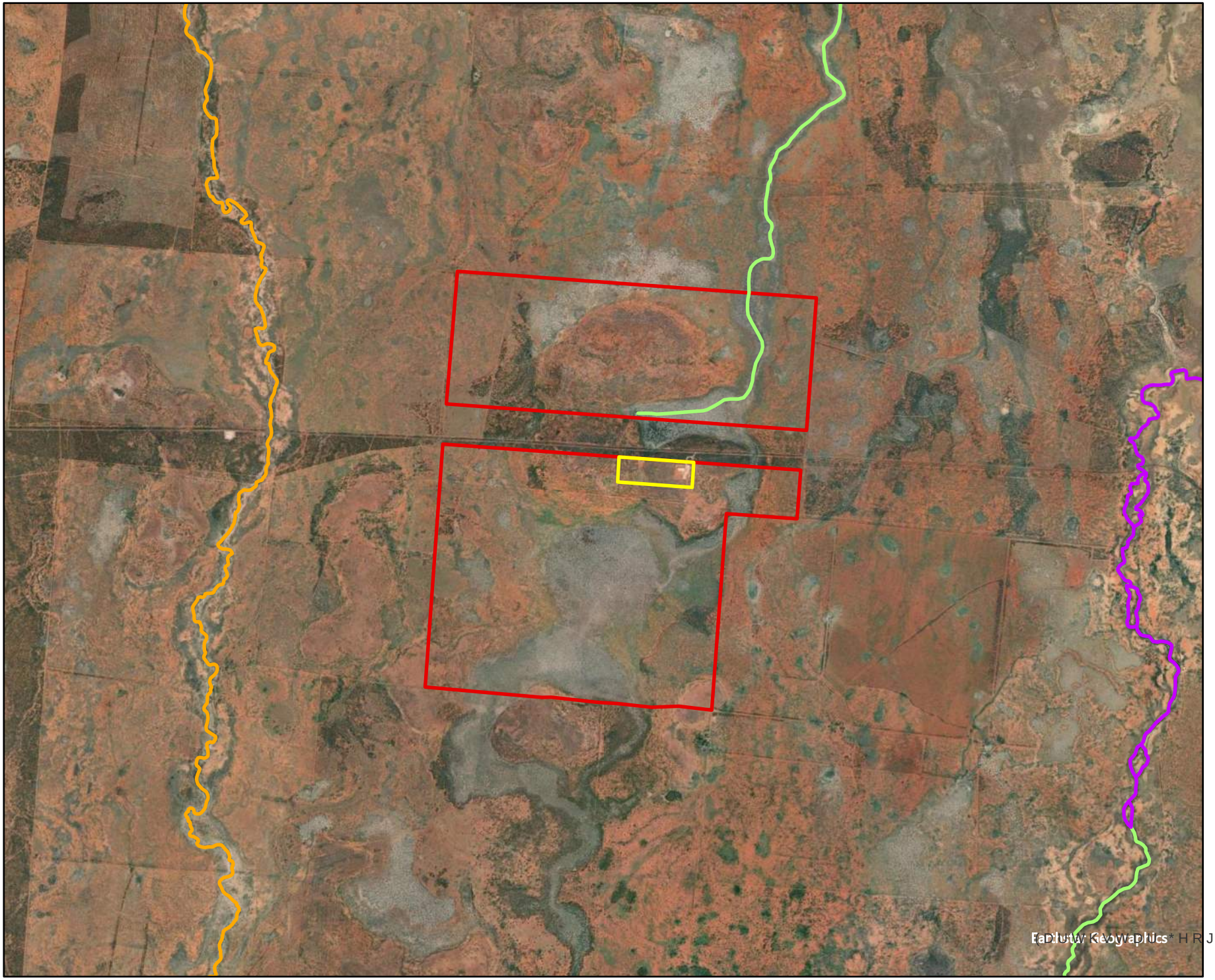

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6.2 Bushfire

The State Planning Policy's (SPP) Natural Hazards Risk and Resilience (Bushfire Prone Area) mapping shows that the site contains areas of Medium Potential Bushfire Intensity and Potential Impact Buffer (Figure 6). The total extractive activities area is not mapped within a bushfire prone area.

6.3 Land

6.3.1 Topography

The total extractive activities area is located at 190-200 m Australian Height Datum (AHD). The site survey identified topography at the total extractive activities area as being relatively flat.

6.3.2 Geology

Detailed surface geology mapping provided in QLD Globe shows that the total extractive activities area is on an area of colluvium.

6.3.3 Soils

Bureau of Rural Sciences (2009) generally describes soils within the total extractive activities area as red massive earths.

6.3.4 Agricultural Land

The total extractive activities area is not mapped as an Important Agricultural Area or as Agricultural land by SPP mapping (Figure 7 and Appendix C). Land immediately south of the total extractive activities area within the site is mapped as Agricultural Land Class A1/C1.

6.3.5 Stock Routes

The road reserve of the Balonne Highway (immediately north of the total extractive activities area) is mapped as a stock route under SPP mapping (Figure 7).

6.3.6 Hazardous Activities

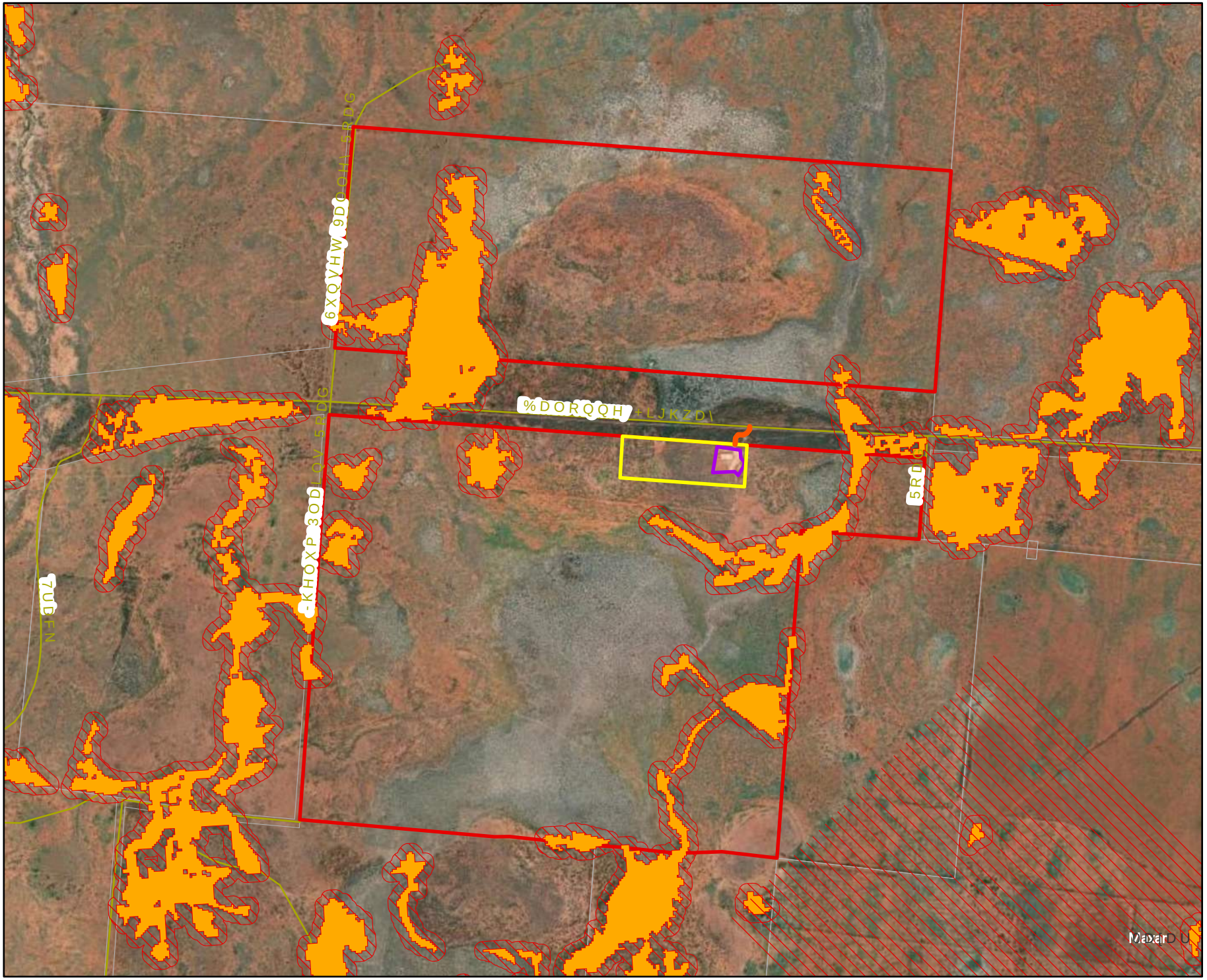
A high-pressure gas pipeline occurs within an easement at the site approximately 430m south of the total extractive activities area (Figure 7).

6.3.7 Contaminated Land

The site is not listed on the Environmental Management Register (EMR) or Contaminated Land Register (CLR) (Appendix D). The site was not recorded on the Department of Defence's Unexploded Ordnance (UXO) database (Appendix D).

6.3.8 Acid Sulphate Soils

Acid sulphate soils (ASS) are a characteristic feature of marine and estuarine sediments in low lying coastal environments, particularly where landform elevations are below 5 m AHD. The total extractive activities area is located approximately 610 km inland and at an elevation of 190-200 m AHD. The site or the total extractive activities area is not mapped in an ASS hazard area in QLD Globe. ASS are highly unlikely to occur at the site due to its elevation, geological and geomorphic setting.



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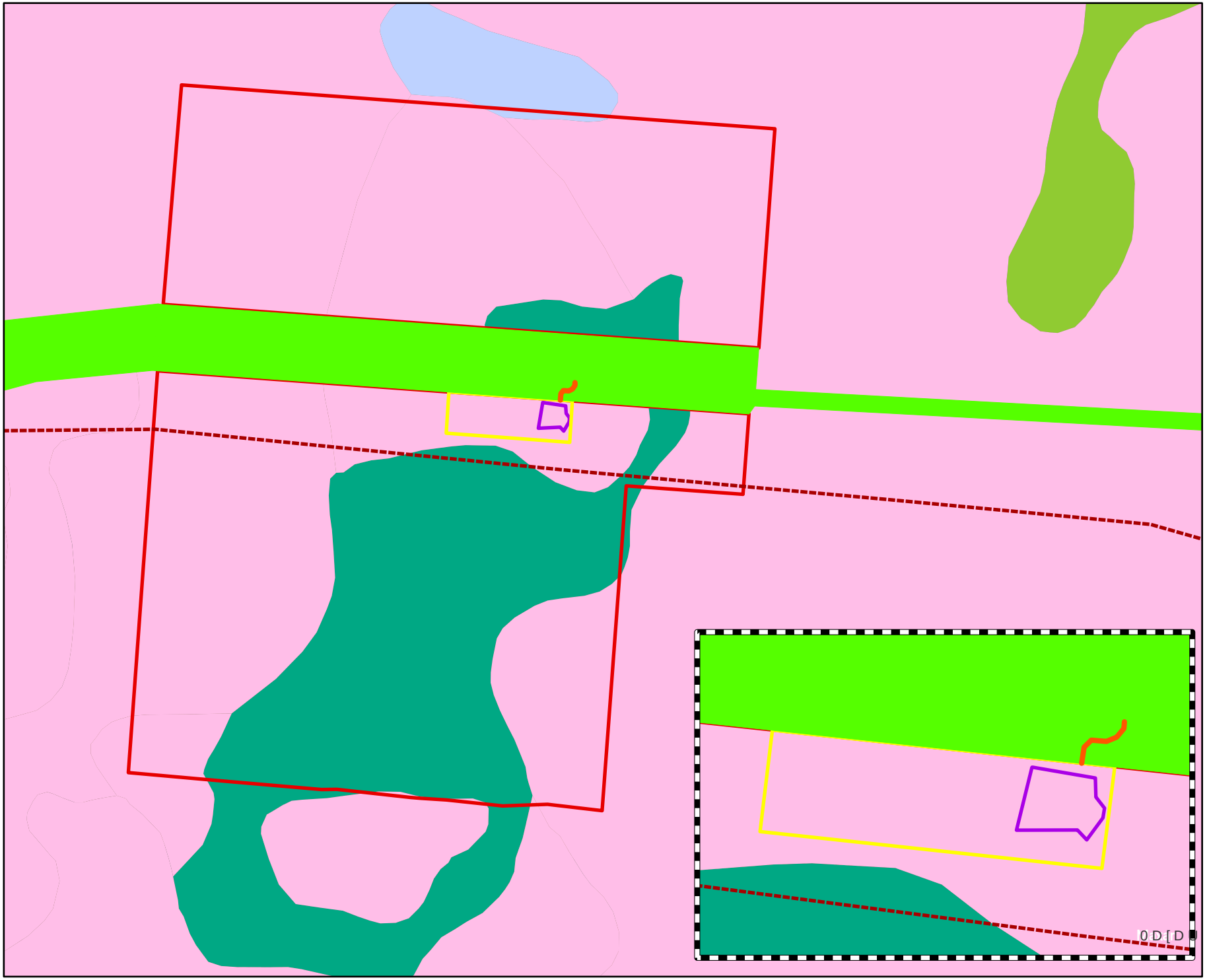

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6.4 Hydrology

6.4.1 Surface Water

The site is located in the Lower Mungallala and Wallam Creeks catchment of the Warrego, Paroo and Bulloo Rivers and Nebine, Mungallala and Wallam Creeks basins. The site is intersected by two (2) unnamed drainage features that drain to the north-east where they enter Mungallala Creek located approximately 8.7 km east of the total extractive activities area (Figure 8). Vincent Valley, mapped as MSES – Regulated vegetation (intersecting a watercourse), occurred in the northern land parcel of the site (Figure 8). The site survey confirmed that there are no watercourses within the total extractive activities area and the existing site access point.

6.4.2 Flood Hazard

The site is mapped within a Level 1 Queensland floodplain flood hazard area under the Balonne Shire Planning Scheme 2019 and SPP mapping (Figure 9). The total extractive activities area is not mapped within the flood hazard area.

6.4.3 Groundwater

There was one (1) registered groundwater bore within a nominal 1 km buffer of the site (Figure 10). The bore card for this bore (RN49759) was reviewed (Appendix C). The groundwater in the local area is artesian and is associated with the sandstone aquifers of the Hooray Sandstone formation. The top of the shallowest aquifer recorded was 645 m below ground level.

The total extractive activities area is mapped as including a Potential Groundwater Dependent Ecosystem (GDE) aquifer (Figure 10). A Potential GDE aquifer is one that potentially supports surface expression and terrestrial GDEs in the landscape. There are no surface expression GDEs mapped near the site and Terrestrial GDE areas are mapped in all directions of the total extractive activities area (minimum of 340 m). No springs were mapped at the site under Queensland Globe.

No groundwater GDE were observed within the total extractive activities area during the site survey.

6.4.4 Environmental Values of Waters

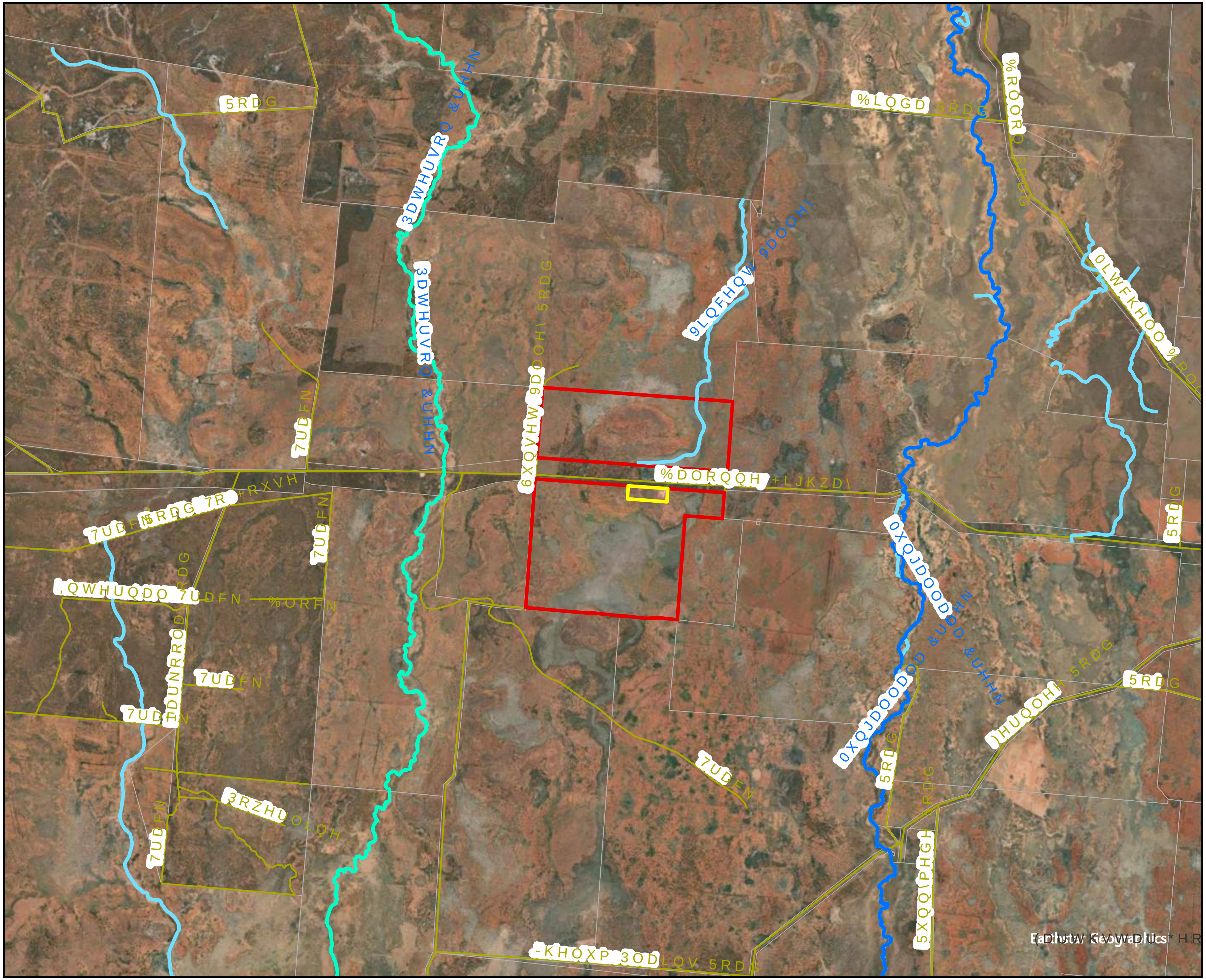
Environmental Values for surface water in the Lower Mungallala and Wallam Creeks catchment include (DES, 2020):

- Aquatic ecosystems.
- Irrigation.
- Farm supply/use.
- Stock water.
- Human consumer.
- Primary recreation.
- Secondary recreation.
- Visual recreation.
- Drinking water.
- Industrial use.
- Cultural, spiritual, and ceremonial values.

Environmental Values for groundwater in Weathered Alluvium of Sediments Overlying the GAB Zones include (DES, 2020):

- Aquatic ecosystems.
- Irrigation.

- Farm supply/use.
- Stock water.
- Aquaculture.
- Drinking water.
- Industrial use.
- Cultural, spiritual and ceremonial values.



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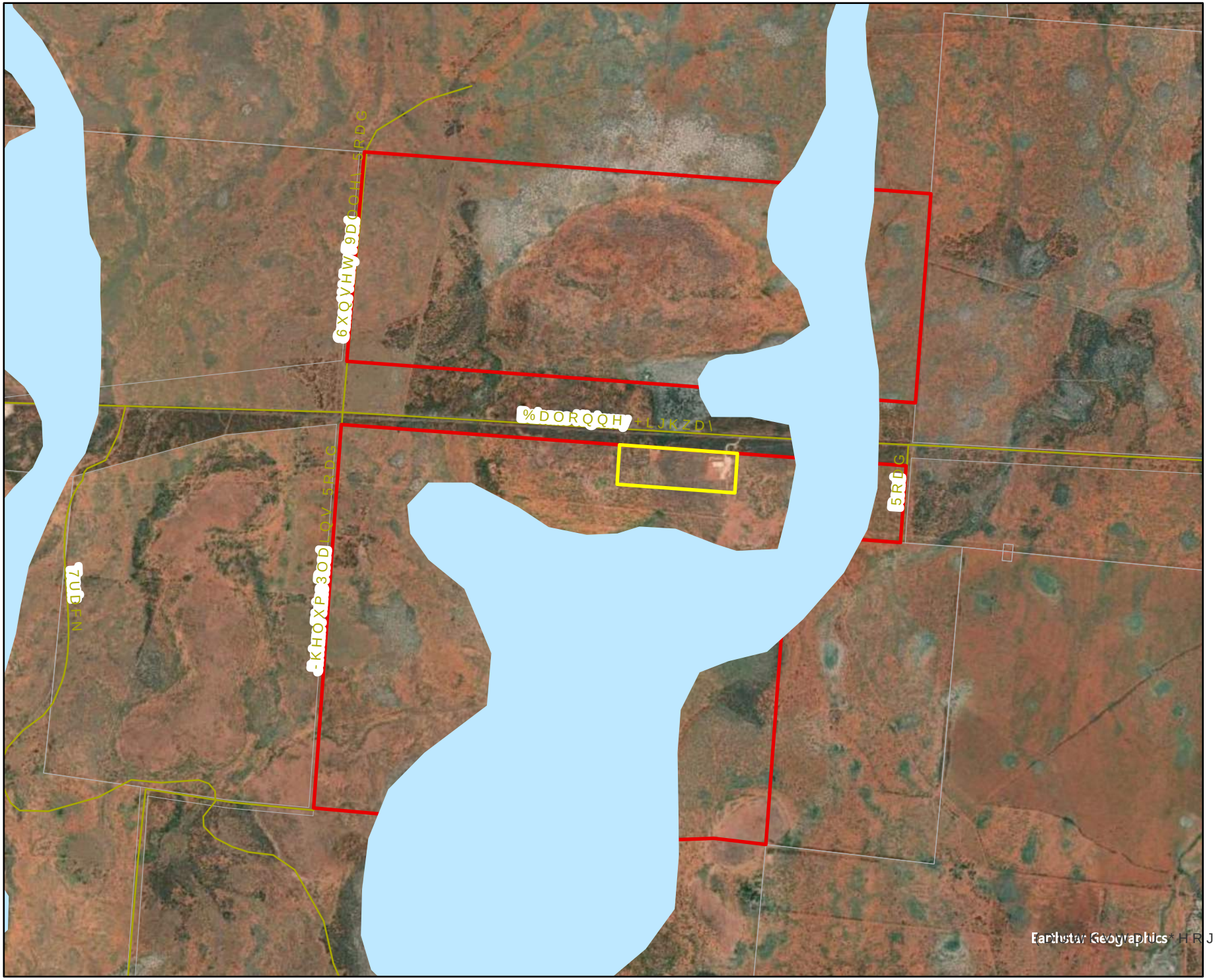

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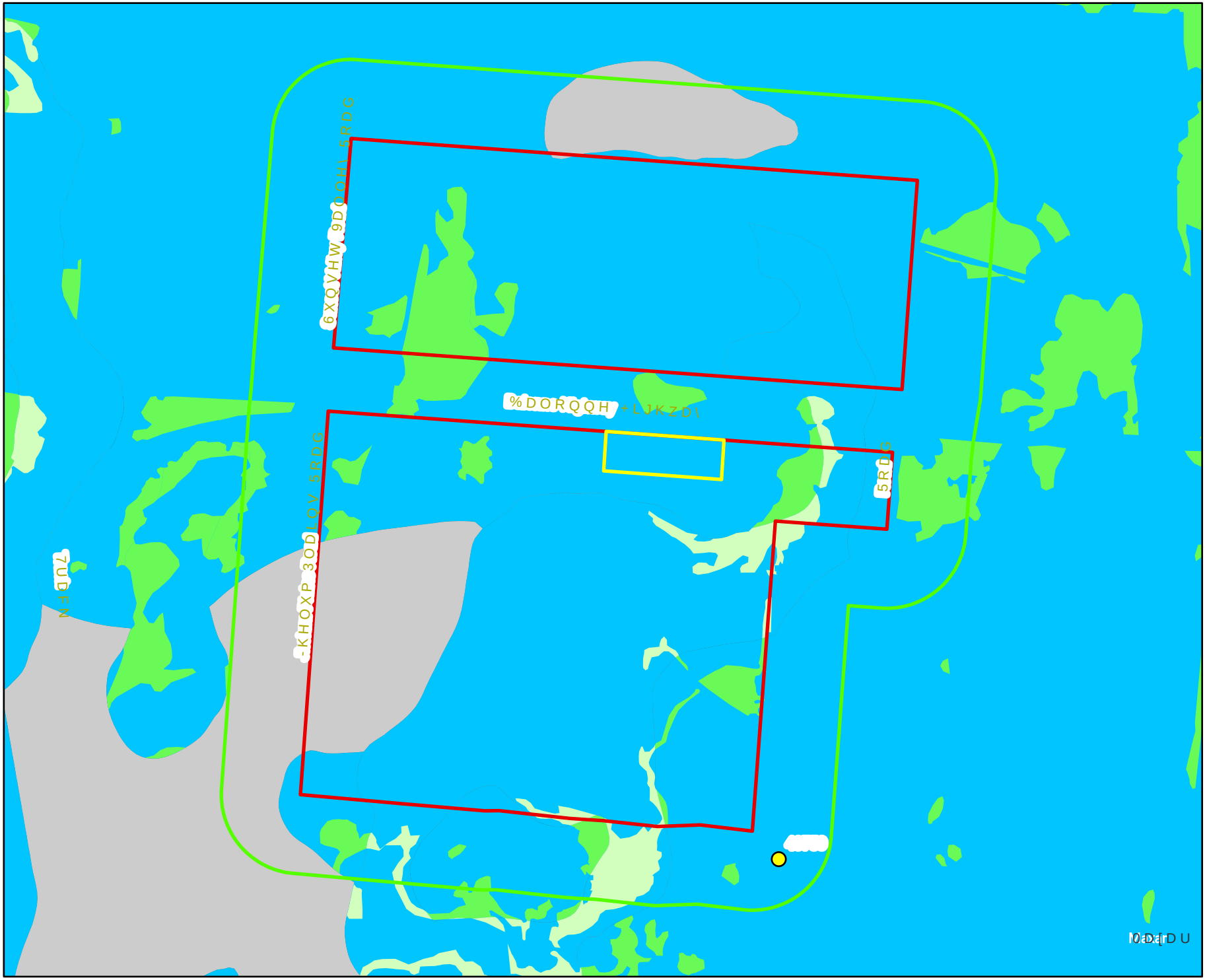

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6.5 Visual Amenity

The site is zoned as Rural. The proposed expansion of quarrying activities will have very limited visibility from publicly accessible areas such as the Balonne Highway due to existing vegetation and setback distance from the Highway (204 m).

6.6 Cultural Heritage

The site was recorded as having indigenous cultural heritage values as demonstrated below.

6.6.1 Indigenous Cultural Heritage

A search of the Department of Aboriginal and Torres Strait Islander Partnerships' Cultural Heritage Database and Register (Appendix E) identified three (3) 'Isolated Finds' within the site recorded from 1983 which were within 1.6 km of the total extractive activities area (Figure 11).

The mapped extent of cultural heritage values from 1983 may not be completely representative of the cultural heritage values on the ground but may instead represent a lack of survey, therefore other matters of cultural heritage value may occur elsewhere within the site or the total extractive activities area.

The Native Title Register showed no results for Indigenous Land Use Agreements or any other claims at the site.

6.6.2 Other Cultural Heritage

The site has no other cultural heritage values recorded on Local, State or Federal databases or registers (Appendix E).

6.7 Air and Noise

The site is within a Rural zoned area under the Balonne Planning Scheme 2019. Other land uses in the local area of relevance to ambient air and noise levels include:

- Public Roads: Balonne Highway is 190 m north of the total extractive activities area.
- Grazing land uses are the dominant land use in the broader landscape.

Figure 12 shows that the nearest sensitive receptor is located approximately 6.6 km from the total extractive activities area.

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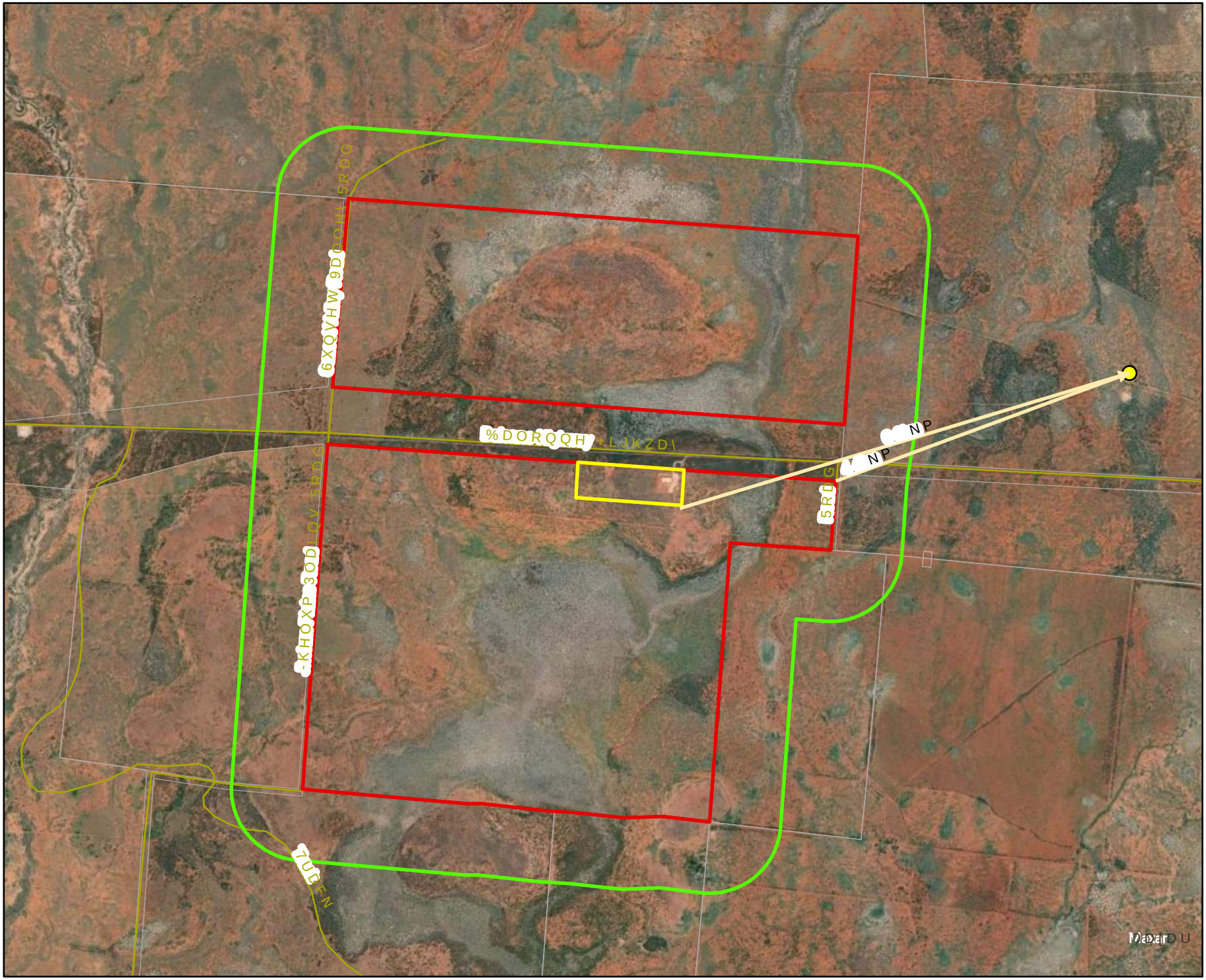

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6.8 Climate

This section provides a description of the climatic features of the region based on data from the Bureau of Meteorology's (BoM) Bollon Mary Street weather station (Station No. 044010). The distance from the Bollon Mary Street weather station to the site is approximately 23.5 km.

6.8.1 Temperature

The area experiences a temperate climate with hot summers (average maximum of 35.6°C) and cold winters (average minimum of 4.3°C).

6.8.2 Rainfall

Median annual rainfall for the area is 443.1 mm. The monthly distribution of median rainfall demonstrates that the region experiences distinct wet and dry seasons (Figure 13). Most rainfall occurs over summer (October to March) with the least amount of rainfall received in the middle of the year (April to September).

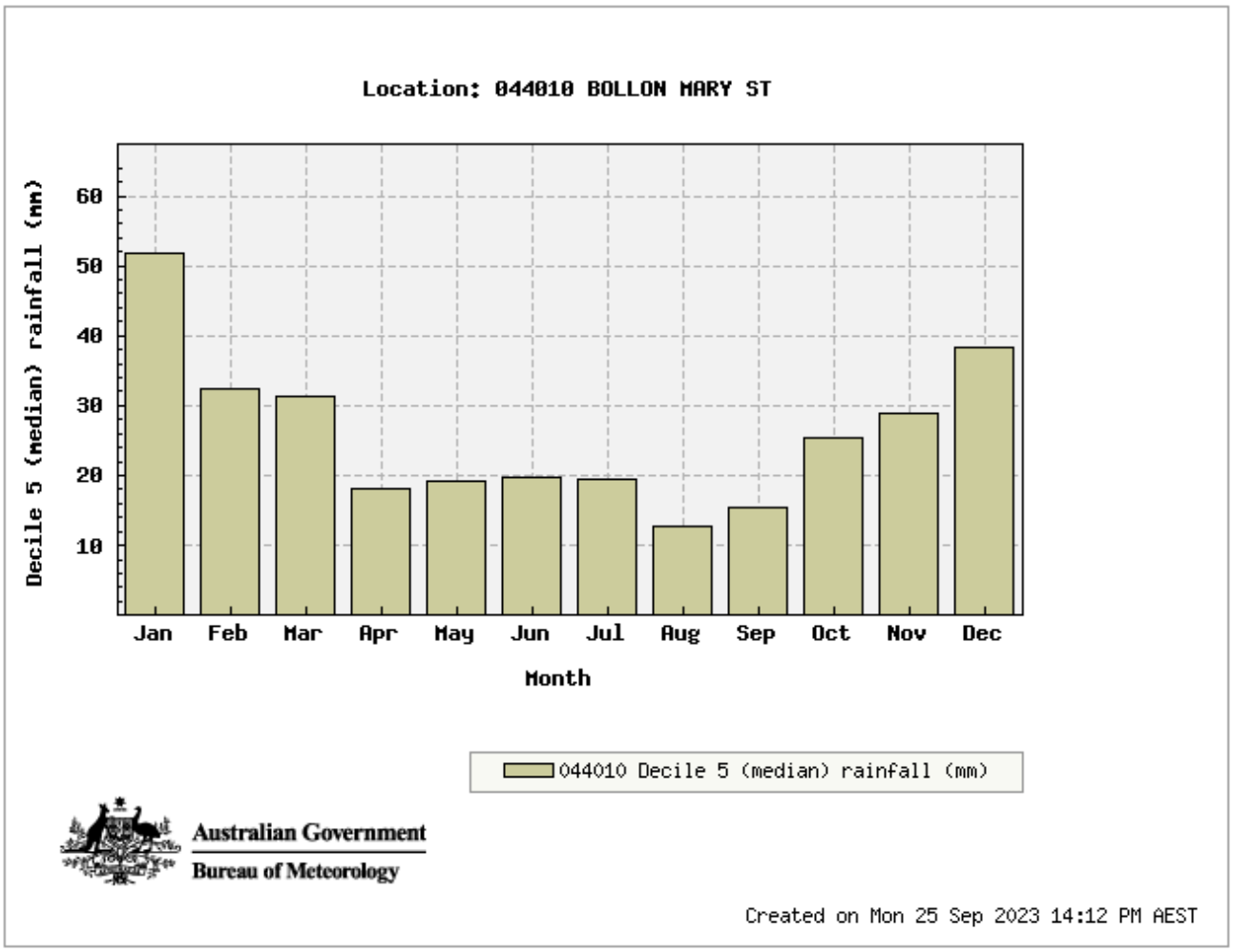


Figure 13 Median rainfall for the region

6.8.3 Wind

An annual wind rose for the area is presented at Figure 14 for the Bollon Mary Street weather station (Station no. 044010) which shows that the prevailing annual wind direction is from the south-west (BoM, 2022).

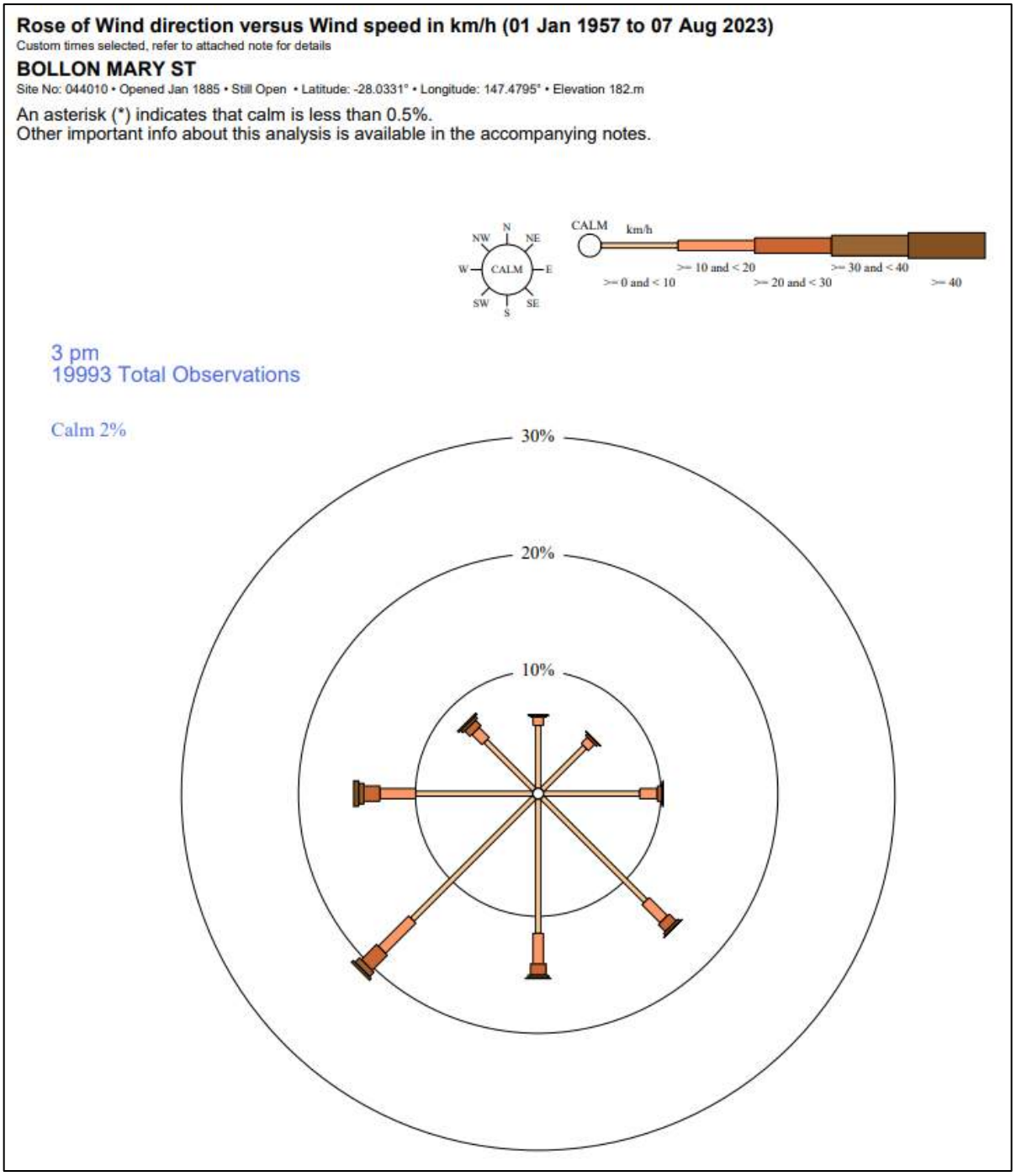


Figure 14 Bollon Mary Street Annual Wind Rose

7 Emissions Profile

A project emissions profile is provided in Table 9 to describe potential emission sources from the proposed quarrying activities.

Table 9 Project Emissions Profile

Emission Type and Description	Potential Source and Impact
Amenity - Noise, Air, Greenhouse Gas, Light, and Visual	
Noise emissions from site operations.	• Noise emissions from mechanical plant and equipment, vehicle movements and extractive industry processes (blasting, crushing, and screening) causes nuisance at noise sensitive receptors.
Vibration emissions from the site's blasting operations.	• Overpressure from blasting activities causes environmental nuisance at sensitive receptors or compromises infrastructure integrity.
Fly rock from the site's blasting operations.	• Fly rock from blasting activities creates an offsite safety risk.
Air emissions from site operations.	• Fugitive dust emissions from loading gravel, haulage activities and wind erosion of exposed surfaces causes nuisance at sensitive receptors.
Odour emissions from site operations.	• Nil - no odour emissions are expected from the site's proposed operations.
Greenhouse gas emissions (GHG) from site operations	• The conduct of ERA 16 (2)(b) and ERA 16 (3)(b) at the site will result in GHG emissions.
Light emissions from night-time site operations.	• Nil – no site lighting or night-time quarrying operations are proposed. The nearest light sensitive receptor is 6.6 km from the site.
Water – Surface Water, Groundwater, and Stormwater	
Release of sediment laden stormwater from the total extractive activities area.	• Poor management of disturbed areas and stormwater causes a release of sediment laden stormwater to the Lower Mungallala and Wallam Creeks catchment.
Spills or leaks of liquid contaminants to waters.	• Spill/leak from the diesel AST, during refuelling, plant and equipment maintenance activities or equipment failure causes release of hydrocarbons to waters.
Poor management of wastes causes a release to waters.	• Poor management/maintenance of wastes causes a release to waters.
Release of firefighting water during an emergency at the site.	• Nil - The risk of a fire in relation to the proposed quarrying activities requiring active control and extinguishment that presents a risk of serious or material environmental harm is low. The only fuel/chemical storage associated with the use will be diesel which is combustible and not flammable and therefore presents a lower fire risk.
Floodwaters are impacted by chemical storages at the site.	• Nil – A release to flood waters is highly unlikely as the total extractive activities area is located outside of mapped flood hazard areas.
Land	
Spills or leaks of liquid contaminants to land.	• Spill/leak from the diesel AST, during refuelling, plant and equipment maintenance activities or equipment failure causes release of hydrocarbons to soil.

Poor management of wastes causes a release to soil.	• Poor management/maintenance of liquid wastes causes release to land that adversely affects soil quality.
Erosion of soil by wind or water.	• Erosion of soil by wind or water in disturbed areas of land within the total extractive activities area.
Release of firefighting water during an emergency at the site.	• Nil - The risk of a fire in relation to the proposed quarrying activities requiring active control and extinguishment that presents a risk of serious or material environmental harm is low. The only fuel/chemical storage associated with the use will be diesel, which is combustible and not flammable, so it presents a lower fire risk.
Waste	
Disposal of wastes to land or waters at the site.	• Nil - no onsite disposal of wastes from the activity to land or waters are proposed.
Accidental spills, leaks, or losses of wastes to the environment.	• General and Regulated Wastes become wind-blown or entrained in runoff. • Accidental spills/leaks of liquid wastes causes a release to land, stormwater, surface water or groundwater.

8 Assessment of Impacts to PEM

8.1 Impacts to MNES that are PEM

No MNES were determined to occur or be likely to occur at or adjacent to the total extractive activities area. Therefore, with consideration of the *Matters of National Environmental Significance – Significant Impact Guidelines* (v1.1) (DoE, 2013), the proposed expansion of the extractive industry operation at the site will be unlikely to have a significant impact on MNES and will not require referral under the EPBC Act.

8.2 Impacts to MSES that are PEM

The following MSES were identified at Table 8 for further assessment. As demonstrated below, the proposed expansion of the extractive industry operation at the site will not have a significant residual impact on any MSES and therefore will not require environmental offsets.

8.2.1 Protected wildlife habitat

The desktop assessment and site inspection (2023) determined the following:

- The site is not within a 'High Risk Area' for protected plants and no protected plants were observed within the total extractive activities area during the site inspection.
- The site is not within a Koala Habitat Area under SDAP mapping.
- Habitat for Echidna may be present within the total extractive activities area and the immediate surrounds. As Echidna is listed as a Special Least Concern species, the presence of possible habitat means that this species is an MSES.

However, with consideration of Chapter 5 of the Queensland Environmental Offsets Policy - Significant Residual Impact Guideline (DEHP, 2014), the proposed expansion of the extractive industry operation at the site will not have a significant residual impact on this MSES (Protected wildlife habitat – Short-beaked Echidna) for the following reasons outlined in Table 10.

Table 10 SRI assessment for Short-beaked Echidna

SRI Criteria – Special Least Concern (non-migratory) animal wildlife habitat	Assessment
An action is likely to have a significant impact on a special least concern (non-migratory) animal wildlife habitat if it is likely that it will result in:	
A long-term decrease in the size of a local population.	This impact is unlikely to occur because: • Main threats to Echidna are feral dogs, foxes, cats, and snakes. Existing predation pressure from these animals will not be increased by the proposed expansion in the short or long term. • Habitat loss can also be a threatening process for Echidna populations. However, disturbance to habitat will only occur during extractive activities. The total extractive activities area will be progressively rehabilitated to allow the site to be returned to the current grazing use and to the standard of general habitat currently available to this species. • The proposed expansion will not cause a long-term decrease in the local Echidna population as it won't increase predation pressures or permanently reduce habitat availability or impede Echidna movements across the local landscape.
A reduced extent of occurrence of the species.	This impact is unlikely to occur because:

	• Disturbance to habitat will only occur during extractive activities. The total extractive activities area will be progressively rehabilitated to allow the site to be returned to the current grazing use and to the standard of general habitat currently available to this species. • The proposed expansion will not cause a reduced extent of occurrence of this widely distributed species as it will not permanently reduce habitat availability or impede Echidna movements across the local landscape.
Fragmentation of an existing population. Result in genetically distinct populations forming as a result of habitat isolation.	These impacts are unlikely to occur because: • Disturbance to habitat and local fauna movements will only occur during extractive activities. The total extractive activities area will be progressively rehabilitated to allow the site to be returned to the current grazing use and to the standard of general habitat currently available to this species. • • Any impediments to movement across the local landscape by Echidna will be short term and temporary. This is unlikely to cause fragmentation of any existing local populations of this species or result in habitat isolation that causes the formation of genetically distinct populations.
Disruption to ecologically significant locations (breeding, feeding or nesting sites) of a species.	This impact is unlikely to occur because: • The total extractive activities area provides only general habitat for Echidna that is widely available in the local area. During the life of the quarry, the total extractive activities area will be progressively rehabilitated to allow the site to be returned to the current grazing use and to the standard of general habitat currently available to this species. • This species often shelters among rocks and piles of debris, under bushes, in hollow logs, among tree roots or in wombat and rabbit burrows. These features may be available locally in higher quality habitat that is beyond the total extractive activities area. • The proposed expansion will not cause disruption to ecologically significant locations and habitat features for Echidna.

8.3 Summary of Impacts to MSES that are PEM

As required by the DESI IR, the following summary of impacts to MSES that are PEM has been compiled (Table 11).

Table 11 Authorised impacts to PEM

Prescribed Environmental Matter	Location of impact	Maximum extent of impact (ha)	Significant residual impact and offset requirement?
Regulated Vegetation			
Endangered prescribed regional ecosystem – insert RE ID			
Not applicable (NA)	NA	0.00	No
Of concern prescribed regional ecosystem (not within an urban area) – insert RE ID			

NA	NA	0.00	No
Prescribed regional ecosystems (not within an urban area) that intersect a wetland on the vegetation management wetlands map – insert RE ID			
NA	NA	0.00	No
An area of essential habitat (not in an urban area) on the essential habitat map for an animal that is critically endangered wildlife, endangered wildlife or vulnerable wildlife or a plant that is critically endangered wildlife, endangered wildlife or vulnerable wildlife – insert species name			
NA	NA	0.00	No
For native vegetation clearing - essential habitat (not in an urban area) for an animal that is near threatened wildlife or a plant that is near threatened wildlife – insert species name			
NA	NA	0.00	No
Regional ecosystems (not within an urban area) within the defined distance from the defining banks of a relevant watercourse or relevant drainage feature – insert RE ID			
NA	NA	0.00	No
Connectivity Areas			
Connectivity area that is a regional ecosystem (not in urban area) – insert RE ID			
NA	NA	0.00	No
Wetlands and Watercourses			
A wetland in a wetland protection area – insert reference			
NA	NA	0.00	No
A wetland of high ecological significance shown on the map of Queensland wetland environmental values – insert reference			
NA	NA	0.00	No
A wetland or watercourse in high ecological value waters – insert reference			
NA	NA	0.00	No
Designated Precincts in Strategic Environmental Areas			
Designated precinct in a strategic environmental area – insert reference			
NA	NA	0.00	No
Protected Wildlife Habitat			
An area that is shown as a high risk area on the flora survey trigger map and that contains plants that are critically endangered wildlife, endangered wildlife or vulnerable wildlife - insert area and species names			
NA	NA	0.00	No
An area that is not shown as a high-risk area on the flora survey trigger map that contains plants that are critically endangered wildlife, endangered wildlife or vulnerable wildlife – insert area and species names			
NA	NA	0.00	No
A koala habitat area (only for SEQ)			
NA	NA	0.00	No
Habitat for an animal that is critically endangered wildlife, endangered wildlife or vulnerable wildlife or a special least concern animal – insert area and species name			
Short-beaked Echidna (*Tachyglossus aculeatus*) (Special Least Concern)	Total extractive activities area	74.8	No

Protected Areas			
A protected area - national park (all classes)			
NA	NA	0.00	No
A protected area – conservation park			
NA	NA	0.00	No
A protected area – resources reserve			
NA	NA	0.00	No
A protected area – special wildlife reserve			
NA	NA	0.00	No
A protected area – nature refuge			
NA	NA	0.00	No
Highly Protected Zones of State Marine Parks			
A highly protected area of a relevant Queensland marine park.			
NA	NA	0.00	No
Fish Habitat Areas			
A declared fish habitat area – insert reference			
NA	NA	0.00	No
Waterway Providing for Fish Passage			
Any part of a waterway (not in an urban area) providing for passage of fish – insert reference			
NA	NA	0.00	No
Marine Plants			
Marine plant (not in an urban area) – insert reference			
NA	NA	0.00	No
Legally Secured Offset Area			
Legally secured offset area – insert reference			
NA	NA	0.00	No

9 Environmental Impact Risk Assessment

A qualitative environmental risk assessment was undertaken with reference to HB 203:2006 Environmental Risk Management - Principles and process (Standards Australia, 2006) to assess the environmental risk presented to the local environmental values described at Section 6.

9.1 Context

- The proposal is for the proposed expansion (including increased quarrying footprint and an increased rate of extraction, screening and crushing) at the existing 'Rockville Pit' quarry located across a portion of Lot 3 MGL20.
- There are existing approvals at the site for quarrying activities.
- The site requires a site-specific Environmental Authority amendment for ERA 16 (2)(b) and ERA 16 (3)(b).
- Major stakeholders that have a strong interest in the operations of the quarry include:
  - Tierney Crushing & Transport Pty Ltd.
  - Balonne Shire Council.
  - Department of Environment and Science.
  - Industry/companies purchasing the products from the quarry.
  - Companies/businesses that may supply goods and services to the quarry.
  - Neighbouring land holders located near the quarry.
- The site is zoned as Rural under the Balonne Shire Planning Scheme 2019.
- The dominant surrounding land use is grazing.
- The nearest sensitive receptor occurs approximately 4.4km from the site and 6.6km from the total extractive activities area.

9.2 Scope

To determine the level of environmental risk presented by the proposed expansion to local environmental values.

9.3 Identification of Environmental Risks

The risk of potential impacts to environmental values are identified in Table 12 below.

9.4 Risk Analysis

A qualitative analysis of environmental risks from the proposed expansion is provided in Table 12. The risk analysis tool is provided at Appendix F.

9.5 Risk Evaluation

As shown in Table 12, the proposed expansion was found to present a low risk of adverse environmental impact.

9.6 Risk Treatment and Monitoring

The Site Based Management Plan (SBMP) prepared by Range Environmental (Reference: J001483) describes how environmental risks will be treated and monitored to maintain a low level of environmental risk for the future operation of the quarry.

Table 12 Qualitative Environmental Impact Risk Analysis

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
Land	Spill/leak from the diesel AST, during refuelling, plant and equipment maintenance activities or equipment failure causes release of hydrocarbons to soil.	Unlikely	Insignificant	Low	• The diesel AST shall be self-bunded. • Diesel shall be stored in accordance with *AS1940-2017 The storage and handling of flammable and combustible liquids.* • Mechanical repairs and servicing of plant and equipment will be undertaken offsite. • Plant and equipment shall be maintained in accordance with manufacturer's specifications to prevent spills and leaks of hydrocarbons. • Spill kits shall be available in strategic locations at the site (e.g., at the diesel AST). • Wastes shall be stored to prevent leakage to the environment. • No onsite waste disposal shall be permitted. • No significant risk of land contamination was identified for the proposed quarrying operations from accidental spills/leaks.
	Poor management/maintenance of the effluent storage tank causes release to land that adversely affects soil quality.	Rare	Insignificant	Low	• The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • Effluent in the tank shall be removed as required by a regulated waste contractor. • No significant risk of impact to land from effluent storage is anticipated.
	Erosion of soil by wind or water in disturbed areas of land within the total extractive activities area.	Occasionally	Insignificant	Low	• Disturbed areas will be progressively rehabilitated in accordance with the SBMP. • The nearest mapped creek (Paterson Creek) is located approximately 7 km to the west of the site (Figure 8). • No significant erosion or sedimentation runoff is anticipated.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment

Water	Poor management of disturbed areas and stormwater causes a release of sediment laden stormwater to the Lower Mungallala and Wallam Creeks catchment.	Occasionally	Insignificant	Low	• Disturbed areas will be progressively rehabilitated in accordance with the SBMP.
					• The total extractive activities area is at least 7 km from the nearest creek (Figure 8).
					• Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan as follows:
					  ◦ A detention basin shall be established in the western portion of the total extractive activities area (Figure 2) to mitigate median peak runoff flows. Detained runoff shall be discharged to the north through a pipe outlet.
					  ◦ Four (4) sediment basins shall be established across the total extractive activities area (Figure 2) to mitigate sediment loads leaving the site.
					  ◦ Dirty water drains shall be established across the total extractive activities area to convey runoff internal to the total extractive activities area to the sediment basins.
					• No significant impacts to the environmental values of the Lower Mungallala and Wallam Creeks catchment are anticipated.

	Spill/leak from the diesel AST, during refuelling, plant and equipment maintenance activities or equipment failure causes release of hydrocarbons to waters.	Unlikely	Insignificant	Low	• The diesel tank shall be self-bunded. • Diesel shall be stored in accordance with *AS1940-2017 The storage and handling of flammable and combustible liquids.* • The diesel AST shall not be located near a stormwater drain or watercourse. • Groundwater is deep and at a low risk of impact by the diesel AST. • Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan.

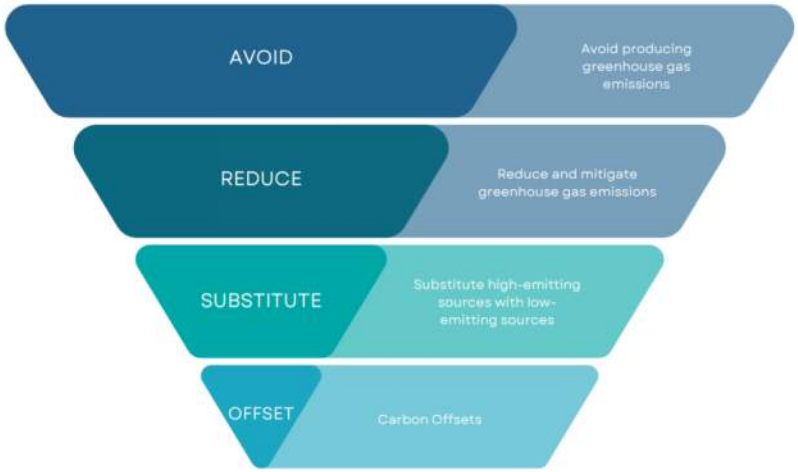
Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					• Plant and equipment shall be maintained in accordance with manufacturer's specifications to prevent spills and leaks of hydrocarbons. • No significant risk of stormwater, surface water or groundwater contamination was identified for the proposed quarrying activities.
	Poor management/maintenance of the effluent storage tank causes a release to waters.	Rare	Insignificant	Low	• Effluent shall be collected as required by a regulated waste contractor. • The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • No significant risk of impact to stormwater, surface water or groundwater from effluent storage is anticipated.
Amenity (Noise, Air, Greenhouse Gas and Light)	Noise emissions from mechanical plant and equipment, vehicle movements and extractive industry processes (blasting, crushing, and screening) causes nuisance at noise sensitive receptors.	Unlikely	Insignificant	Low	• The Rural zone code under the Balonne Planning Scheme 2019 outlines a minimum separation distance of 1000 m for hard rock extraction activities from a residential or other sensitive land use. Noise amenity is likely to be protected at the nearest sensitive receptor by the large separation distance of 6.6 km (Figure 12). • Section 12 of the CCAA (2015) guideline states that a separation distance of up to 2 km from a hard rock quarry in flat terrain will be adequate for achieving the noise criteria outlined at Table 1 of the guideline. There is a large available separation distance of 6.6 km to the nearest noise sensitive receptor from the total extractive activities area (Figure 12). • No complaints have been received regarding current quarrying operations at the site. • Operating hours shall occur within the hours outlined at Table 5. • Plant and equipment shall be maintained in accordance with manufacturer's specifications to reduce noise emissions.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					• No significant impacts to amenity in relation to noise emissions are anticipated with the implementation of the management measures outlined in the SBMP and the adequate separation distances.
	Overpressure from blasting activities causes environmental nuisance at sensitive receptors or compromises infrastructure integrity.	Rare	Insignificant	Low	• Infrastructure integrity and amenity are likely to be protected at the nearest sensitive receptor by the large separation distance of 6.6 km (Figure 12). • Blasting is likely to occur approximately three (3) times per year at the site. • The blasting contractor shall undertake the activities in accordance with their blast management plan and procedures. • No significant impacts to amenity in relation to air blast overpressure are anticipated.
	Fly rock from blasting activities creates an offsite safety risk.	Rare	Insignificant	Low	• Infrastructure integrity and amenity are likely to be protected at the nearest sensitive receptor by the large separation distance of 6.6 km (Figure 12). • Blasting is likely to occur approximately three (3) times per year at the site. • The blasting contractor shall undertake activities in accordance with their blast management plan and procedures. • No significant impacts to public safety by fly rock at offsite locations is anticipated.
	Fugitive dust emissions from loading gravel, haulage activities and wind erosion of exposed surfaces causes nuisance at sensitive receptors.	Unlikely	Insignificant	Low	• The Rural zone code under the Balonne Planning Scheme 2019 outlines a minimum separation distance of 1000 m for hard rock extraction activities from a residential or other sensitive land use. Air quality amenity at the nearest sensitive receptor will be preserved by the large separation distance of 6.6 km and existing woody vegetation (Figure 12). • Water down of haulage routes at the site shall be undertaken as required to minimise dust emissions from vehicle movements.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					• No complaints have been received regarding current quarrying operations at the site. • Significant impacts to air quality from the proposed quarrying activities are unlikely to occur with the implementation of the management measures outlined in the SBMP and the adequate separation distances.
	GHG emissions are released to the atmosphere as a direct result of the activity (i.e., Scope 1 under the DESI's GHG Guideline) that significantly contribute to climate change.	Unlikely	Insignificant	Low	The following information was collated to respond to Table 3 of the DESI's Greenhouse gas emissions Guideline (2024) regarding the application requirements for low emitters (i.e., generate <25,000t CO2-e per year): • Appendix 2 under the DESI's Emission scores profile of environmentally relevant activities (2024) does not list 'Greenhouse Levels' for ERA 16 as a contaminant to be considered when determining an emissions score for ERA 16. • Quantitative GHG emissions assessments for other quarries with a proposed annual extraction rate of 475,000t and 600,000t were calculated to generate 3004t CO2-e/year and 3296t CO2-e/year respectively (Edge Environmental, 2015 and NSW DPH&I 2024). Both example quarry assessments included vegetation clearing and extraction and screening operations. Based on GHG emissions calculations from these similar projects, the expected GHG emissions (Scope 1 and Scope 2) from the proposed Rockville Quarry is likely to be <3000t CO2-e/year (i.e., a low emitter). • The Department considered that the calculated 3296 CO2-e/year from the proposed 600,000t annual extraction operation would provide a negligible contribution to Australia's GHG emissions (NSW DPH&I 2024). • The conduct of ERA 16 (2)(b) and ERA 16 (3)(b) to extract and screen up to 300,000t/year at the site presents a low risk of impact to GHG emissions and is

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment

					unlikely to significantly contribute to climate change impacts on Queensland's environmental values.
					• The following mitigation measures shall be used at the site to minimise GHG emissions and improve future GHG emissions:
					  • GHG emissions for the site shall adhere to the DESI's GHG abatement hierarchy as far as reasonably practicable (Figure 15).
					  • Reduce vehicle idling time.
					  • Optimise and schedule vehicle operations to reduce fuel consumption.
					  • Minimise transportation distances and optimise supply chains to reduce fuel consumption where reasonably practicable.
					  • Use local materials and resources to cut down on transportation-related emissions where reasonably practicable.
					  • Maintain plant and equipment in accordance with the manufacturer's recommendations.
					  • Consider GHG emissions when purchasing new plant and equipment.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					 ***Figure 15 GHG abatement hierarchy (DESI, 2024)***
	Light emissions from trucks accessing/leaving the site between 5:00am and 7:00pm causes nuisance at sensitive receptors.	Unlikely	Insignificant	Low	• Extensive areas of woody vegetation are located between the total extractive activities area and the nearest sensitive receptor that will assist in buffering light emissions from trucks exiting the site onto Balonne Highway. • Outdoor lighting shall be designed, installed, operated, and maintained in accordance with Australian Standard *AS4282-2019 control of the obtrusive effects of outdoor lighting.*

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
Waste	General and Regulated Wastes become wind-blown or entrained in runoff.	Unlikely	Insignificant	Low	• Wastes or other materials shall not be burnt at the site. • Bins shall be covered and emptied regularly to prevent odour emissions and windblown litter. • Waste management for the proposed quarrying operations is unlikely to present a significant risk of environmental impact.
Biodiversity	Clearing of protected vegetation communities (Regional Ecosystems or TECs).	Rare	Insignificant	Low	• The total extractive activities area is restricted to an area mapped as Category X non-remnant vegetation. • The total extractive activities area has strategically been located a minimum distance of 50m from mapped Category C vegetation. Therefore, the remnant vegetation will be avoided in accordance with Australian Standard *AS4970-2009: Protection of trees on development sites.* • The site access track, located within mapped Category C vegetation, is existing and will require no further vegetation clearing. • No clearing of protected vegetation communities, including Regional Ecosystems or TECs, is proposed. • No significant impacts to remnant vegetation are anticipated.
	Harm to threatened flora and fauna species and their habitat.	Rare	Unlikely	Low	• The total extractive activities area is not located in a mapped protected plant trigger area. • Threatened flora and fauna were not observed within the total extractive activities area and are unlikely to occur based on the available habitat resources and ongoing disturbance by the continued quarrying operations. • The proposed expansion will not impact threatened flora or fauna.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
	Introduction or spread of weeds, pests (rodents) and vectors (mosquitoes).	Unlikely	Minor	Low	• Weeds and pests (rodents, cockroaches, etc.) shall be managed as part of routine site maintenance. • Proposed quarrying activities are not anticipated to present a significant risk with regards to the proliferation of weeds, pests (rodents) or vectors (mosquitoes).
	Harm to the ecological values and functions of waterways or wetlands.	Rare	Insignificant	Low	• The total extractive activities area does not contain or immediately adjoin any waterways or wetlands. • Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan. • The proposed expansion will not impact the ecological values or functions of any waterways or wetlands in the Lower Mungallala and Wallam Creeks catchment.
	Adverse impacts to landscape connectivity or protected areas.	Rare	Insignificant	Low	• The site or the total extractive activities area does not include or adjoin any protected areas. • The site survey confirmed that the total extractive activities area does provide some function in landscape connectivity for small birds, reptiles, and macropods. • Disturbed areas shall be progressively rehabilitated in accordance with the SBMP to ensure landscape connectivity values are maintained where possible. • The proposed expansion will not adversely impact on landscape ecological values or connectivity.
	Adverse impacts on PEM (MSES or MNES) at the site.	Rare	Insignificant	Low	• The total extractive activities area has strategically been located a minimum distance of 50m from mapped Category C (regrowth vegetation). This is not a prescribed regional ecosystem and therefore is not PEM. • The total extractive activities area may provide suitable habitat for Echidna. The proposed expansion is not considered to have a significant impact on a special least concern (non-migratory) animal wildlife

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					habitat (Echidna) as it will not result in the impacts outlined under Section 5.1 of the Significant Residual Impact Guideline (Table 10). • No significant residual impacts to PEM (MSES or MNES) are anticipated. • Referral of the project under the EPBC Act is not warranted.
Bushfire	Bushfire impacts supporting infrastructure and endangers personnel.	Unlikely	Minor	Low	• The site office will be located within an already disturbed area (Figure 2). • The total extractive activities area is not mapped within a bushfire prone area under SPP mapping (Figure 6). • The site survey identified a moderate fire threat from vegetation within the total extractive activities area. • Bushfire is unlikely to present a significant risk to the proposed quarrying activities with the implementation of the management measures detailed in the SBMP.
Visual Amenity	Quarrying activities or the installation of ancillary infrastructure reduces the visual amenity of the site.	Rare	Insignificant	Low	• Due to the relatively flat terrain of the local area, the rural setting, large available separation distances, and existing woody vegetation, there are no sensitive viewpoints that will be able to see the quarrying operations or ancillary infrastructure. • The total extractive activities area will be situated in the northern portion of the southern land parcel at the site, which, due to existing vegetation, is not visible from Balonne Highway. • No changes to the existing site access off Balonne Highway are proposed. The existing site access track is consistent with that expected of the local area. • No significant impacts to visual amenity values by the proposed quarrying activities are anticipated.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
Cultural Heritage	Quarrying activities impact the cultural heritage values of the site.	Rare	Insignificant	Low	• There are no known cultural heritage values within the total extractive activities area (Figure 11 and Appendix E). • All works shall be undertaken in accordance with the DATSIP's Duty of Care Guidelines. • No unauthorised excavation works (or related works) shall be undertaken outside the total extractive activities area. • Significant impacts to cultural heritage values by the proposed quarrying activities are unlikely with the implementation of the management measures outlined in the SBMP.

10 Summary

The proposal involves an increased quarrying footprint and an increased rate of extraction, screening and crushing at the existing 'Rockville Pit' quarry located across a portion of Lot 3 MGL20.

The qualitative environmental impact risk assessment considered the potential for harm to occur to environmental values from project emissions and relevant aspects of the expansion and operation of the quarry.

The operation of the proposed expansion is not anticipated to have a significant impact on the environmental values of the local area. Implementation of the SBMP will maintain the low risk of harm to environmental values during the operation of quarry.

The proposed expansion will not have a significant residual impact on a PEM therefore no environmental offsets are required.

11 References

Bureau of Meteorology (BoM). 2023. Bollon Mary Street weather station (Station No. 044010) Annual Wind Rose.

Bureau of Rural Sciences. 2009. Digital Atlas of Australian Soils. Bioregional Assessment Source Dataset.

CCAA. 2015. Assessment and Control of Environmental Noise Emission from Quarries – Queensland.

Cornell University. 2024. eBird Australia. https://ebird.org/species/eaywag1#:~:text=Widespread%20wagtail%2C%20favoring%20wet%20meadows,sided%20tail%20up%20and%20down.

Department of Environment and Science (DES). 2020. Environmental Values and Water Quality Objectives: Parts of Basins 011, 422, 423, 424, including all surface waters of the Warrego, Paroo and Bulloo Rivers and Nebine, Mungallala and Wallam Creeks basins.

Department of Environment, Science and Innovation (DESI). 2024. Emission scores profile of environmentally relevant activities.

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Edge Environmental Pty Ltd. 2015. Report for Element Environment - Jandra Quarry Intensification Project Green House Gas Emissions Assessment.

New South Wales Department of Planning, Housing and Infrastructure. 2024. Eagleton Quarry Project – State Significant Development Assessment Report (SSD 7332).

RMA Engineers. 2024. Quarry – Rockville Quarry | Bollon. Stormwater Management Plan. 23E-0152 (Revision 0).

Appendices

Appendix A Code Response Tables

Table 13 State Code 22: Environmentally relevant activities (v3.0)

Performance outcomes	Acceptable outcomes	Response
All ERAs		
PO1 Development is suitably located and designed to avoid or mitigate environmental harm to the acoustic environment.	**AO1.1** Development meets the acoustic quality objectives for sensitive receptors identified in the Environmental Protection (Noise) Policy 2019.	Complies with PO1 as the site is in an area that is not near a noise sensitive receptor: • Section 12 of the CCAA (2015) guideline states that a separation distance of up to 2 km from a hard rock quarry in flat terrain will be adequate for achieving the noise criteria outlined at Table 1 of the guideline. There is a large available separation distance of 6.6 km to the nearest noise sensitive receptor from the total extractive activities area (Figure 12). • Noisy activities (including blasting, extracting, crushing, and screening activities) shall only be undertaken during the operating hours outlined at Table 5. • Blasting activities shall be undertaken in accordance with best management practices and the blasting contractor's blast management plan and procedures. • Noise emitting activities shall be managed in accordance with the SBMP prepared for the proposed expansion (Reference: J001483).
PO2 Development is suitably located and designed to avoid or mitigate environmental harm to the air environment.	**AO2.1** Development meets the air quality objectives of the Environmental Protection (Air) Policy 2019.	Complies with PO2 as: • The closest sensitive receptor to the site is located approximately 6.6 km from the total extractive activities area (Figure 12). • Blasting activities shall be undertaken in accordance with best management practices and the blasting contractor's blast management plan and procedures. • Weather conditions shall be monitored to ensure blasting activities are avoided being undertaken during unfavourable weather

Performance outcomes	Acceptable outcomes	Response
		conditions (e.g., high winds) unless otherwise required for safety reasons. • Disturbed areas shall be progressively rehabilitated to minimise dust emissions from exposed areas. • The proposed quarrying activities shall be managed in accordance with the SBMP prepared for the proposed expansion (Reference: J001483).
PO3 Development (other than intensive animal industry for poultry farming), is suitably located and designed to avoid or mitigate environmental harm on adjacent sensitive land uses caused by odour.	No acceptable outcome is prescribed.	Complies with PO3 as the site is located in an area that is not near a sensitive land use: • The closest sensitive receptor to the site is located approximately 6.6 km from the total extractive activities area (Figure 12). • Effluent/wastewater from staff amenities shall be stored in a sealed holding tank and removed by a regulated waste contractor as required. • The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • There are no other odour sources as part of the proposed expansion. • The proposed quarrying activities shall be managed in accordance with the SBMP prepared for the proposed expansion (Reference: J001483).
PO4 Development is suitably located and designed to avoid or mitigate environmental harm to the receiving waters environment.	**AO4.1** Development meets the management intent, water quality guidelines and objectives of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.	Complies with PO4 because: • Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan as follows: • A detention basin shall be established in the western portion of the total extractive activities area (Figure 2) to mitigate median peak runoff flows.

Performance outcomes	Acceptable outcomes	Response
		Detained runoff shall be discharged to the north through a pipe outlet. • Four (4) sediment basins shall be established across the total extractive activities area (Figure 2) to mitigate sediment loads leaving the site. • Dirty water drains shall be established across the total extractive activities area to convey runoff internal to the total extractive activities area to the sediment basins. • Erosion and sediment controls shall be implemented and align with AustIECA (2008) Best Practice Erosion and Sediment Control. • Disturbed areas shall be progressively rehabilitated. • The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • Effluent in the holding tank shall be removed as required by a regulated waste contractor. • Hydrocarbon wastes will either be removed by the service technicians at the end of the task/day (whichever occurs first) or temporarily stored undercover on a bunded pallet until removal offsite by a regulated waste contractor can occur. • The diesel AST at the site shall be self-bunded. • General and recyclable wastes from staff amenities shall be stored to prevent exposure to rainfall or stormwater or leakage to the environment.

Performance outcomes	Acceptable outcomes	Response
		• No significant risk of surface water or groundwater contamination was identified for the proposed expansion. • The proposed quarrying activities shall be managed in accordance with the SBMP (Reference: J001483).
PO5 Development is designed to include elements which: 1. prevent or minimise the production of hazardous contaminants and waste as by-products; or 2. contain and treat hazardous contaminants on-site rather than releasing them into the environment; and 3. provide secondary containment to prevent the accidental release of hazardous contaminants to the environment from spillage or leaks.	No acceptable outcome is prescribed.	Complies with PO5 as: • No significant wastes will be generated by the proposed operations. • The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • Effluent in the holding tank shall be removed as required by a regulated waste contractor. • No onsite disposal of wastes shall be permitted. • Hydrocarbon wastes will either be removed by the service technicians at the end of the task/day (whichever occurs first) or temporarily stored undercover on a bunded pallet until removal offsite by a regulated waste contractor can occur. • The diesel AST at the site shall be self-bunded. • General and recyclable wastes from staff amenities shall be stored to prevent exposure to rainfall or stormwater or leakage to the environment. • There are no significant risks associated with the proposed expansion regarding hazardous contaminants, wastes and the potential for contamination of environmental media. • Hazardous contaminants and wastes shall be managed in accordance with the SBMP

Performance outcomes	Acceptable outcomes	Response
		prepared for the proposed expansion (Reference: J001483).
PO6 Environmentally hazardous materials located on-site are stored to avoid or minimise their release into the environment due to inundation during flood events.	No acceptable outcome is prescribed.	Complies with PO6 as: • The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • Effluent in the holding tank shall be removed as required by a regulated waste contractor. • No onsite disposal of wastes shall be permitted. • Hydrocarbon wastes will either be removed by the service technicians at the end of the task/day (whichever occurs first) or temporarily stored undercover on a bunded pallet until removal offsite by a regulated waste contractor can occur. • The diesel AST at the site shall be self-bunded. • General and recyclable wastes from staff amenities shall be stored to prevent exposure to rainfall and stormwater or leakage to the environment.
All development – matters of state environmental significance		

Performance outcomes	Acceptable outcomes	Response
PO7 Development is designed and sited to: 1. avoid impacts on matters of state environmental significance; or 2. minimise and mitigate impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provide an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance.	No acceptable outcome is prescribed.	Complies with PO7 as: • The total extractive activities area has strategically been located a minimum distance of 50m from mapped Category C (regrowth vegetation) (Figure 4). • The total extractive activities area may provide suitable habitat for Echidna. The proposed expansion is not considered to have a significant impact on a special least concern (non-migratory) animal wildlife habitat (Echidna) as it will not result in the impacts outlined under Section 5.1 of the Significant Residual Impact Guideline (Table 10). • No significant residual impacts to MSES are anticipated.
Intensive animal industry – poultry farming (ERA 4(2))		
PO8 Poultry farming development (where farming more than 200,000 birds) is suitably located and designed to avoid or mitigate environmental harm on adjacent sensitive land uses, caused by odour.	**AO8.1** For poultry farming involving 300,000 birds or less, development meets the separation distances as determined using the S-factor methodology to: 4. a sensitive land use in a rural zone; and 5. boundary of a non-rural zone. OR **AO8.2** Development meets the separation distances as determined by odour modelling using the following criteria: 6. 2.5 odour units, 99.5 percent, 1 hour average for a sensitive land use in a rural zone; or 7. 1.0 odour units, 99.5 percent, 1 hour average for the boundary of a non-rural zone.	PO8 is not applicable as the proposed expansion is for an extractive industry and not a poultry farming development.

Table 14 Balonne Shire Planning Scheme 2019

Performance outcomes	Acceptable outcomes	Response
Rural zone code		
PO1 Proposed uses established in the Rural zone do not conflict with existing rural land uses or the biodiversity (including MSES), scenic and community values of the area.	**AO1** No acceptable outcome is prescribed.	Complies with PO1 as: • The site is currently occupied by the existing 'Rockville Pit' quarry. • Mapped areas of MSES – Regulated Vegetation Category B and Category C at the site are outside of the total extractive activities area (Figure 4). • The total extractive activities area is not mapped as an Important Agricultural Area or as Agricultural land by SPP mapping (Figure 7 and Appendix C). • The proposed expansion of quarrying activities will have very limited visibility from publicly accessible areas such as the Balonne Highway due to existing vegetation and at residential dwellings in the local area due to large separation distances (6.6 km).
PO2 Uses established in the Rural zone do not conflict with: (a) petroleum infrastructure that occurs on petroleum leases or under petroleum facility licences and pipeline licences. (b) the function of stock routes. (c) mining leases and claims.	**AO2.1** Development is located a minimum of 200m from a pipeline or pipeline easement in SPP Mapping – Hazards and Safety – Emissions and Hazardous Activities – High pressure gas pipelines. Schedule 4 – Online Mapping Resources – Mines Online Maps. **AO2.2** No acceptable outcome is prescribed for the use of lots fronting the stock route network on SPP mapping – Economic Growth, Agriculture, Stock Route Network. **AO2.3** Development that occurs within a priority agricultural area is undertaken in accordance with the *Regional Planning Interests Act*.	Complies with PO2 as: • The road reserve of the Balonne Highway (immediately north of the total extractive activities area) is mapped as a stock route under SPP mapping (Figure 7). The proposed expansion will not result in a significant increase to traffic generated from operations. • A high-pressure gas pipeline occurs within an easement at the site approximately 430m south of the total extractive activities area (Figure 7) which is greater than the minimum separation distance required. • The total extractive activities area is not mapped as an Important Agricultural Area or as Agricultural land by SPP mapping (Figure 7 and Appendix C).

Performance outcomes	Acceptable outcomes	Response
PO4 Extractive industry is adequately separated from sensitive land uses to minimise potential for nuisance or complaint.	**AO4.1** Residential and other sensitive uses, are not located: (a) within 200m of mechanical extraction of sedimentary deposits; or (b) within 1,000m of hard rock extraction. **AO4.2** New extractive uses and activities are not established within 1,000m of existing sensitive rural, residential or tourist uses.	Complies with PO4 as: • The nearest sensitive receptor to the site is located approximately 6.6 km from the total extractive activities area (**Figure 12**) which is far greater than the minimum separation distance required.

Appendix B Quarrying Approvals

Permit[1]

Environmental Protection Act 1994

Environmental authority

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Permit[1] number: EPPR01645113

Environmental authority takes effect 16 November

The anniversary date of this environmental authority is 30 September each year. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Mr Andrew Tierney	11574 Carnarvon Highway ST GEORGE QLD 4487

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
16-(2a) Extractive >5000t but <100000t yr 16-(3a) Screening >5000t but <100000t yr	Rockville Pit, Balonne Highway, BOLLON QLD 4488 - Lot 3 Plan MGL20 Surat Road Pit, Carnarvon Highway, ST GEORGE QLD 4487 - Lot 51 Plan SP173138
16-(2b) Extractive >100000t but <1000000t yr 16-(3b) Screening >100000t but <1000000t yr	Wilgatoo Pit, Moonie Highway, ST GEORGE QLD 4487 - Part Lot 4 Plan BEL53171

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority is issued is a restatement of the ERA as defined by legislation at the time the approval is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an environmental authority as to the scale, intensity or manner of carrying out an ERA, then the conditions prevail to the extent of the inconsistency.

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority specifically authorises environmental harm.

[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

	16-11-15
Signature	Date

Sarah Horton
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Judy Mackenzie
ES – Reg Serv – Western – Twba - EPA
PO Box 731
TOOWOOMBA QLD 4002
Phone: (07) 46994333
Fax: (07) 4699 4388
Email: JUDY.MACKENZIE@ehp.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental authority

Schedule 1: Code Compliant Sites

The environmentally relevant activity(ies) at the location as described in **Table 1** below must be conducted in accordance with the standard conditions contained within the *Code of environmental compliance for certain aspects of extractive and screening activities (ERA 16).*

Table 1 – Code Compliant Sites

Environmentally relevant activity(ies)	Location(s)
16-(2a) Extractive >5000t but <100000t yr 16-(3a) Screening >5000t but <100000t yr	Surat Road Pit, Carnarvon Highway ST GEORGE QLD 4487 - Lot 51 Plan SP173138

Schedule 2: Site Specific Conditions

The environmentally relevant activity(ies) conducted at the location as described in **Table 2** below must be conducted in accordance with the following site specific conditions of approval.

Table 2: Site-specific ERA locations

Environmentally Relevant activity(ies)	Location(s)
16-(2a) Extractive >5000t but <100000t yr 16-(3a) Screening >5000t but <100000t yr	Rockville Pit, Balonne Highway BOLLON QLD 4488 - Lot 3 Plan MGL20
16-(2b) Extractive >100000t but <1000000t yr 16-(3b) Screening >100000t but <1000000t yr	Wilgatoo Pit, Moonie Highway, ST GEORGE QLD 4487- Part Lot 4 Plan BEL53171

<table>
<tr><td colspan="2">Agency interest: General</td></tr>
<tr><td>Condition number</td><td>Condition G1 applicable to Wilgatoo Pit ONLY</td></tr>
<tr><td>G1</td><td>Activities under this environmental authority must be conducted in accordance with the following limitations:
1. The activity is to be conducted within the boundaries identified by GPS points in Table 1 as shown in Schedule 1 – Approved plans titled Figure 4: Site Plan, Proposed Quarry Site Plan Lot 4 – Belmore Parish; Client: Tierney Crushing and Transport; Drawing No: RPMS_12_208
Table 1 – GPS points
<table>
<tr><th>GPS points for the site</th><th>Coordinates Eastings / Northings</th></tr>
<tr><td>North Eastern point</td><td>E681008.02; N6909208.44</td></tr>
<tr><td>Northernmost point</td><td>E680792.84 ; N6909208.35</td></tr>
<tr><td>Westernmost point</td><td>E680711.90 ; N6909326.33</td></tr>
<tr><td>South/westernmost point</td><td>E680925.54 ; N6909451.07</td></tr>
<tr><td>South easternmost point</td><td>E681031.24 ; N6909442.61</td></tr>
</table></td></tr>
<tr><td>Condition number</td><td>Conditions applicable to all sites</td></tr>
<tr><td>G2</td><td>All reasonable and practicable measures must be taken to minimise the likelihood of environmental harm being caused.</td></tr>
<tr><td>G3</td><td>Any breach of a condition of this environmental authority, must be reported to the administering authority as soon as practicable, or at most, within 24 hours of you becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions undertaken.</td></tr>
<tr><td>G4</td><td>Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.</td></tr>
<tr><td>G5</td><td>All information and records that are required by the conditions of this environmental authority must be kept for a minimum of five (5) years. Environmental monitoring results must be kept until surrender of this environmental authority. All information and records required by the conditions of this environmental authority must be provided to the administering authority upon request.</td></tr>
<tr><td>G6</td><td>An appropriately qualified person(s) must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.</td></tr>
</table>

G7	All analyses required under this environmental authority must be carried out by a laboratory that has **NATA** certification, or an equivalent certification, for such analyses.
G8	When required by the **administering authority**, monitoring must be undertaken in the manner prescribed by the **administering authority**, to investigate a complaint that is not considered by the **administering authority** to be frivolous or vexatious, of environmental nuisance arising from the **activity**. The monitoring results must be provided to the **administering authority** upon request.
G9	The **activity** must be undertaken in accordance with written procedures that: 1. identify potential risks to the environment from the **activity** during routine operations, closure and an emergency 2. establish and maintain control **measures** that minimise the potential for environmental harm 3. ensure plant, equipment and **measures** are maintained in a proper and effective condition 4. ensure plant, equipment and **measures** are operated in a proper and effective manner 5. ensure that staff are trained and aware of their obligations under the *Environmental Protection Act 1994* 6. ensure that reviews of environmental performance are undertaken at least annually.
Agency interest: Air	
Condition number	**Condition**
A1	Odours or airborne contaminants which are **noxious** or **offensive** or otherwise unreasonably disruptive to public amenity or safety must not cause nuisance to any **sensitive place** or **commercial place**.
Agency interest: Noise	
Condition number	**Condition N1 applicable to all sites**
N1	Noise generated by the **activity** must not cause environmental nuisance to any sensitive place or commercial place.
Condition number	**Condition N2 applicable to Wilgatoo Pit ONLY**
N2	Blasting or the generation of **substantial low frequency noise** is not permitted.

<table>
<tr><th>Condition number</th><th>Conditions N3 to N6 applicable to Rockville Pit ONLY</th></tr>
<tr><td>N3</td><td>**Blasting** activities must not exceed the limits for peak particle velocity and air blast overpressure in **Table 2 – Blasting noise limits** when measured at any **sensitive place** or **commercial place** in accordance with the associated monitoring requirements.

Table 2 - Blasting noise limits
<table>
<tr><th>Blasting criteria</th><th>Blasting limits</th></tr>
<tr><td>**Airblast overpressure**</td><td>115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time.</td></tr>
<tr><td>Ground **vibration** peak particle velocity</td><td>5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time.</td></tr>
</table>
Associated monitoring requirements
1. Monitoring must be in accordance with the most recent editions of the administering authority's 'Noise and Vibration from Blasting' guideline and Noise Measurement Manual and any relevant Australian standard.
2. All monitoring devices must be correctly calibrated and maintained.</td></tr>
<tr><td>N4</td><td>**Blasting** must be carried out in accordance with the current edition of the **administering authority's** *'Noise and vibration from blasting guideline'* and with Australian Standard 2187.</td></tr>
<tr><td>N5</td><td>Unless prior approval is obtained from the **administering authority:**
1. **blasting** is only permitted during the hours of 9am to 3pm Monday to Friday, and from 9am to 1pm on Saturdays
2. **blasting** is not permitted at any time on Sundays or public holidays.</td></tr>
<tr><td>N6</td><td>When required by the **administering authority,** a blast monitoring program must be developed and implemented to monitor compliance with **Table 2 – Blasting noise limits** at any **sensitive place** or **commercial place**.</td></tr>
<tr><td colspan="2">**Agency interest: Water**</td></tr>
<tr><td>**Condition number**</td><td>**Condition**</td></tr>
<tr><td>WT1</td><td>Contaminants must not be released to and **waters**.</td></tr>
<tr><td>WT2</td><td>Stormwater contaminated by the activity must be managed to minimise or prevent any adverse impacts on the values of the receiving environment.</td></tr>
<tr><td>WT3</td><td>Erosion and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.</td></tr>
</table>

WT4	The stormwater runoff from disturbed areas, generated by (up to and including) a **24 hour storm event with an average recurrence interval of 1 in 5 years** must be retained on site or managed to remove contaminants before release.
Agency interest: Land	
Condition number	**Condition**
L1	Contaminants must not be released to **land**.
L2	Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that: 1. suitable native species of vegetation for the location are established and sustained for earthen surfaces 2. potential for erosion is minimised 3. the quality of water, including seepage, released from the site does not cause environmental harm 4. potential for environmental nuisance caused by dust is minimised 5. the water quality of any residual water body does not have potential to cause environmental harm 6. the final landform is stable and protects public safety.
L3	Rehabilitation of disturbed areas required under condition L2, must take place progressively as works are staged and new areas of extraction are commenced.
Agency interest: Waste	
Condition number	**Condition**
WS1	All waste generated in carrying out the **activity** must be reused, recycled or removed to a facility that can lawfully accept the waste.

Definitions

Note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the Department of Environment and Heritage Protection or its successor or predecessors.

Airblast overpressure is the energy transmitted from the blast site within the atmosphere in the form of pressure waves. As these waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations. The pressure wave consists of both audible (noise) and inaudible (concussion) energy. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels using the linear frequency-weighting.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

Background means noise, measured in the absence of the noise under investigation, as L A90,T being the A-weighted sound pressure level exceeded for 90 per cent of the time period of not less than 15 minutes, using Fast response.

Blasting is the use of explosives to fracture:

- rock, coal and other minerals for later recovery; or
- structural components or other items to facilitate removal from a site or for reuse.

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

$L_{Aeq\ adj,T}$ means the adjusted A weighted equivalent continuous sound pressure level measures on fast response, adjusted for tonality and impulsiveness, during the time period T, where T is measured for a period no less than 15 minutes when the activity is causing a steady state noise, and no shorter than one hour when the approved activity is causing an intermittent noise.

$Max_{LpA,T}$ means the maximum A-weighted sound pressure level measured over a time period T of not less than 15 minutes, using Fast response.

Measures has the broadest interpretation and includes plant, equipment, physical objects, bunding, containment systems, monitoring, procedures, actions, directions and competency.

NATA means National Association of Testing Authorities.

Noxious means harmful or injurious to health or physical well-being.

Offensive means causing offence or displeasure; is unreasonably disagreeable to the sense; disgusting, nauseous or repulsive.

Prescribed contaminants means contaminants listed within Schedule 9 of the *Environmental Protection Regulation 2008.*

Release of a contaminant into the environment means to:

- deposit, discharge, emit or disturb the contaminant
- cause or allow the contaminant to be deposited, discharged, emitted or disturbed
- fail to prevent the contaminant from being deposited, discharged emitted or disturbed
- allow the contaminant to escape
- fail to prevent the contaminant from escaping.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used

by persons at that place:

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- a public thoroughfare, park or gardens; or
- for noise, a place defined as a sensitive receptor for the purposes of the *Environmental Protection (Noise) Policy 2008.*

Substantial low frequency noise means a noise emission that has an unbalanced frequency spectrum shown in a one-third octave band measurement, with a predominant component within the frequency range 10 to 200Hz. It includes any noise emission likely to cause an overall sound pressure level at a sensitive place exceeding 55dB(Z).

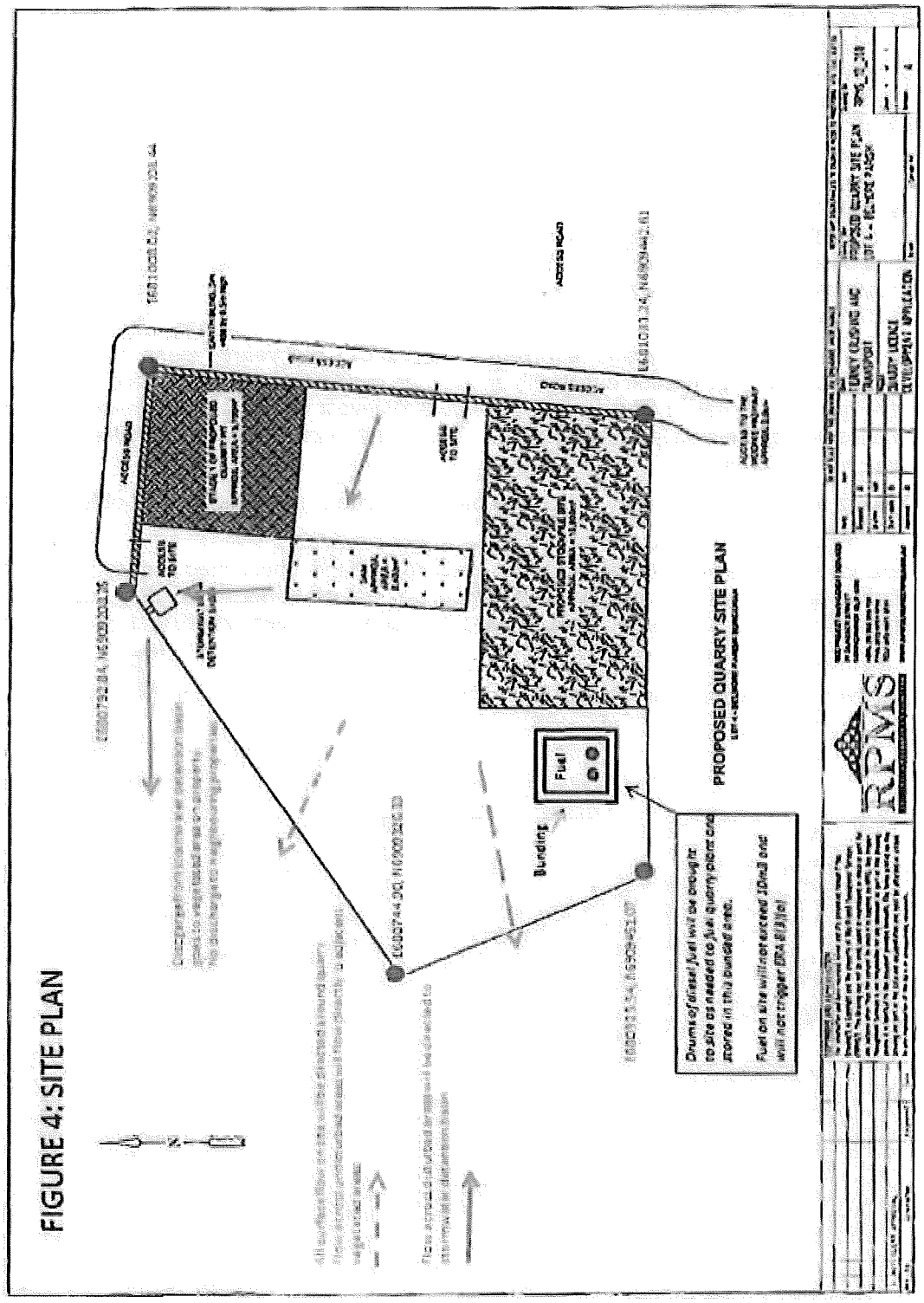
24 hour storm event with an average recurrence interval of 1 in 5 years means the maximum rainfall depth from a 24 hour duration precipitation event with an average recurrence interval of once in 5 years. *For example, an Intensity-Frequency-Duration table for a 24 hour duration event with an average recurrence interval of 1 in 5 years, identifies a rainfall intensity of 7.09mm/hour. The rainfall depth for this event is therefore 24 hour x 7.09mm/hour = 170.16mm.*

Vibration is the oscillating or periodic motion of a particle, group of particles, or solid object about its equilibrium position.

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

You means the holder of the environmental authority.

Schedule 1—Approved plans - *Figure 4: Site Plan, Proposed Quarry Site Plan Lot 4 – Belmore Parish; Client: Tierney Crushing and Transport; Drawing No: RPMS_12_208*



END OF PERMIT

Department of Transport and Main Roads

Quarry Registration Certificate

(INTERIM ONLY)

Certificate Number	2021-002	**Expiry Date**	8 April 2021
TMR Quarry Reference No.	RQ523	**Issue Date**	8 January 2021
Quarry Name	**Rockville Pit**		
Registered Overall Testing Frequency Level	Not Applicable		
Real Property Location	Lot 3 on Plan MGL20		
Quarry Address	Balonne Highway, Bollon QLD 4488 (24km west of Bollon)		
Local Government	Balonne Shire Council		
Latitude	-27.998	**Longitude**	147.245
Rock/Material Types	Sandstone and siltstone		
Rock Material Group	Sedimentary		
Nominated Products:	Unbound Paving Material (Type 4 Only)		
Comments	Please note that this interim registration is subject to the following conditions: • This interim registration with the nominated product (IE. Unbound Paving Material Type 4) listed in the certificate will expire on the 8th of April 2021. The interim registration can be extended to a full registration beyond the above expiry date, provided the quality of the source rock materials and its nominated product meets and complies with the relevant TMR specification requirements. • There should be an inspection by the TMR Manger (QRS) to visually assess all source rock materials and all nominated product stockpiles within this period. • Submission of all relevant nominated product compliance test reports to the relevant specification (IE. unsoaked CBR test values should be reported at OMC level) should be made available to the TMR Manager (QRS) for all lots produced within the first two months of the interim registration period. • No blending is permitted with any other external sources other than sourced from the upper duricrustic horizons of the pit.		
Applicant Name	Tierney Crushing & Transport Pty Ltd		
Applicant Address	PO Box 185, St George QLD 4487		
Quarry Operator	Tierney Crushing & Transport Pty Ltd		

Approvers Signature

Technical Manager (Quarry Registration System)

Notes:

1. This registration certificate should be read in conjunction with the attached Quarry Registration Certificate Testing Frequency Schedule.

2. Departmental Quarry Registration indicates the following:

- The source rock properties submitted are generally superior to those required in the relevant departmental technical specifications.
- The quarry operator will at a minimum, carry out regular source rock testing at frequency levels listed on the attached registered Testing Frequency Schedule.

3. Quarry Registration does not guarantee ongoing product with relevant departmental technical specifications. This is because product properties can also be influenced by many day to day operational factors. These include extraction and production procedures, transportation and construction processes as well as source rock variability.

4.TMR Quarry Registration is conditional on quarry compliance with all relevant Federal, State and Local Government legislation.

Queensland Government

Department of
Transport and Main Roads

08th January 2021

Andrew Tierney
Tierney Crushing and Transport
PO Box 185
St GEORGE QLD 4487

Dear Mr. Tierney

TMR QUARRY REGISTRATION SYSTEM (QRS): RQ523 - INTERIM REGISTRATION FOR ROCKVILLE PIT

The quarry registration application submitted for the above quarry (TMR Quarry Database No. RQ523), has been evaluated and your application for interim registration of the nominated product of Unbound Paving Material Type 4, has been approved as per TMR Quarry Registration System (QRS).

The Interim Quarry Reregistration Certificate (No. 2021-002) is enclosed and will need to be produced in accordance with TMR specifications prior to delivery of materials to Departmental jobs.

Please note that this interim registration is subject to the following conditions:

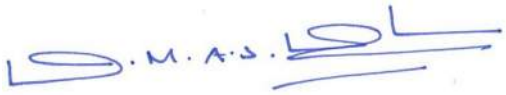
- This interim registration with the nominated product (IE. Unbound Paving Material Type 4) listed in the certificate will expire on the 8th of April 2021. The interim registration can be extended to a full registration beyond the above expiry date, provided the quality of the source rock materials and its nominated product meets and complies with the relevant TMR specification requirements.
- There should be an inspection by the TMR Manger (QRS) to visually assess all source rock materials and all nominated product stockpiles within this period.
- Submission of all relevant nominated product compliance test reports to the relevant specification (IE. unsoaked CBR test values should be reported at OMC level) should be made available to the TMR Manager (QRS) for all lots produced within the first two months of the interim registration period.
- No blending is permitted with any other external sources other than sourced from the upper duricrustic horizons of the pit.

This interim registration will appear on the publicly available Quarry Registration Database after 18th January 2021, if your customers want proof of registration prior to that date you should provide a copy of the new registration certificate.

Department of Transport and Main Roads
Engineering & Technology Branch
Pavements, Materials & Geotechnical Section
Geotechnical Services
PO Box 119 Pinkenba QLD 4008

Telephone **+61 7 417 752 009**
Facsimile +61 7 3066 7798
Website www.tmr.qld.gov.au
Email **ajith.dissanayake@tmr.qld.gov.au**
ABN 39 407 690 291

If you have any questions regarding this interim registration, please do not hesitate to contact me.
Yours sincerely



Ajith (Diss) Dissanayake
TECHNICAL MANAGER (QUARRY REGISTRATION SYSTEM)

Appendix C Ecological Database Searches

Bore Report

From Year:

Registered Number	Facility Type	Facility Status	Drilled Date	Office	Shire
49759	Artesian - Controlled Flow	Existing	26/01/2006	St. George	300 - BALONNE

Details

Description	2 MGL20/ 1 MGL61		
Parish	3325 - MOORINDOORAH		
Original Name			
Driller Name	LORGER, DANIEL PAUL		
Drill Company	DALEY BROTHERS		
Const Method	ROTARY MUD		
Bore Line			
D/O File No	515/222512	**Polygon**	
R/O File No		**Equipment**	
H/O File No		**RN of Bore Replaced**	
Log Received Date		**Data Owner**	
Roles	Water Supply		

Location

Latitude	28-02-49	**Basin**	4225
Longitude	147-14-57	**Sub-area**	
GIS Latitude	-28.0469959	**Lot**	1
GIS Longitude	147.249165	**Plan**	MGL61
Easting	524488		
Northing	6897567	**Map Scale**	
Zone	55	**Map Series**	
Accuracy		**Map No**	
GPS Accuracy		**Map Name**	
Checked	Yes	**Prog Section**	

Casing

7 ***records for RN*** **49759**

Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description	Mat Size (mm)	Size Desc	Outside Diameter (mm)
A	26/11/2006	1	0.00	156.00	Steel Casing	6.400	WT - Wall Thickness	219
A	26/11/2006	2	0.00	541.00	Steel Casing	6.400	WT - Wall Thickness	168
A	26/11/2006	3	537.50	742.00	Steel Casing	6.400	WT - Wall Thickness	141
A	26/11/2006	4	622.00	742.00	Perforated or Slotted Casing	8.000	AP - Aperture Size	141
A	26/11/2006	5	0.00	156.00	Centraliser			

Bore Report

From Year:

Pipe	Date	Rec	Top (m)	Bottom (m)	Material Description	Mat Size (mm)	Size Desc	Outside Diameter (mm)
X	26/11/2006	6	0.00	156.50	Grout			279
X	26/11/2006	7	0.00	541.00	Grout			200

Strata Logs

19 *records for RN* **49759**

Rec	Top (m)	Bottom (m)	Strata Description
1	0.00	7.00	RED TOPSOIL
2	7.00	26.00	WHITE SILTSTONE
3	26.00	40.00	WHITE CLAY
4	40.00	54.00	YELLOW CLAY
5	54.00	63.00	GREY CLAY
6	63.00	64.00	HARD SANDSTONE
7	64.00	121.60	GREY CLAY
8	121.60	122.00	HARD BAND
9	122.00	235.00	GREY SHALE
10	235.00	236.00	SILTSTONE
11	236.00	245.00	GREY SHALE
12	245.00	257.00	SILTSTONE
13	257.00	548.00	GREY SHALE
14	548.00	592.00	SILTSTONE
15	592.00	595.00	MUDSTONE
16	595.00	645.00	PUGGY SILTSTONE
17	645.00	653.00	SANDSTONE (WATER @ 645)
18	653.00	685.00	PUGGY SANDSTONE (WATER @ 685)
19	685.00	742.00	SANDSTONE WITH WHITE PUGGY BANDS

Bore Report

From Year:

Stratigraphies

7 *records for RN* **49759**

Source	Rec	Top (m)	Bottom (m)	Strata Description
DNR	1		64.00	GRIMAN CREEK FORMATION
DNR	2	64.00	257.00	SURAT SILTSTONE
DNR	3	257.00		COREENA MEMBER
DNR	4			DONCASTER MEMBER
DNR	5			WYANDRA SANDSTONE MEMBER
DNR	6			CADNA-OWIE FORMATION
DNR	7	645.00	742.00	HOORAY SANDSTONE

Aquifers

1 *records for RN* **49759**

Rec	Top (m)	Bottom (m)	Lithology	Date	SWL (m)	Flow	Quality	Yield (L/s)	Contr	Cond	Formation Name
1	645.00	742.00	SDST - Sandstone	26/01/2006	25.00	Y	POTABLE	46.00	Y	PS	HOORAY SANDSTONE

Pump Tests Part 1

1 *records for RN* **49759**

Pipe	Date	Rec	RN of Pumped Bore	Top (m)	Bottom (m)	Dist (m)	Meth	Test Types	Pump Type	Suction Set (m)	Q Prior to Test (l/s)	Dur of Q PR (mins)	Pres on Arriv (m)	Q on Arriv (l/s/)
A	21/02/2006	1	49759	622.00	742.00	0.86	ART	AC ST FR DT ST			0.00	15	19.00	19.00

Pump Tests Part 2

1 *records for RN* **49759**

Pipe	Date	Rec	Test Dur (mins)	SWL(m)	Recov Time (mins)	Resid DD (m)	Max DD or P RED (m)	Q at Max DD (l/s)	Time to Max DD (mins)	Max Q (l/s)	Calc Stat HD (m)	Design Yield (l/s)	Design BP (m)	Suct. Set (m)	Tmsy (m2/Day)	Stor
A	21/02/2006	1	285	29.52	45		25.54	34.50	120	37.11						

Bore Report

From Year:

Bore Conditions

0 *records for RN* **49759**

Elevations

0 *records for RN* **49759**

Water Analysis Part 1

0 *records for RN* **49759**

Water Analysis Part 2

0 *records for RN* **49759**

Water Levels

0 *records for RN* **49759**

Wire Line Logs

0 *records for RN* **49759**

Field Measurements

1 *records for RN* **49759**

Pipe	Date	Depth (m)	Conduct (uS/cm)	pH	Temp (C)	NO3 (mg/L)	DO2 (mg/L)	Eh (mV)	Alkalinity (mV)	Samp	Method	Samp	Source
A	26/01/2006	742.00			50.2					PU	Pump - Other or Flowing Bore	GB	Groundwater - from Bore

Special Water Analysis

0 *records for RN* **49759**

Bore Report

From Year:

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 28-Feb-2024

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	17
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	13
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	1
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	900 - 1000km upstream from Ramsar site	In feature area
Riverland	800 - 900km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	1000 - 1100km upstream from Ramsar site	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta			
Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lophochroa leadbeateri leadbeateri			
Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat known to occur within area	In feature area
Neophema chrysostoma			
Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis			
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
Stagonopleura guttata			
Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Maccullochella peelii			
Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat may occur within area	In feature area
PLANT			
Lepidium monoplocoides			
Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Egernia rugosa			
Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Hemiaspis damelii			
Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
Canberra ACT 2601 Australia
+61 2 6274 1111

resources.QLD.GOV.AU

Vegetation management report

For Lot: 3 Plan: MGL20

28/02/2024

Queensland Government

This publication has been compiled by Operations Support, Department of Resources.

Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of Environment and Science have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

Table of Contents

1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 3 Plan: MGL20, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
3	MGL20	Freehold	48,491,460
S	MGL52	Easement	286,000

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does this property have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 3 Plan: MGL20, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Balonne Shire

Bioregion(s)	Subregion(s)
Mulga Lands	West Balonne Plains

Catchment(s)
Balonne-Condamine

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 3 Plan: MGL20

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 4854.63ha

Vegetation category	Area (ha)
Category B	383.2
Category C	16.8
Category X	4454.7

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2019/003412

2009/003314

2005/106573

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
6.3.24	Least concern	B	87.03	Eucalyptus coolabah and/or E. populnea +/- Acacia cambagei, A. aneura, Atalaya hemiglauca woodland on sand deposits on alluvial plains of major watercourses	Sparse
6.3.24	Least concern	C	0.45	Eucalyptus coolabah and/or E. populnea +/- Acacia cambagei, A. aneura, Atalaya hemiglauca woodland on sand deposits on alluvial plains of major watercourses	Sparse
6.3.7	Least concern	B	0.02	Eucalyptus coolabah open woodland on clay alluvial plains	Very sparse
6.3.7	Least concern	C	5.77	Eucalyptus coolabah open woodland on clay alluvial plains	Very sparse
6.4.3	Of concern	B	16.65	Eucalyptus populnea, Casuarina cristata or Acacia harpophylla +/- Geijera parviflora woodland on clay plains	Sparse
6.5.17	Of concern	B	180.21	Eucalyptus populnea, E. melanophloia, Callitris glaucophylla, Corymbia tessellaris in mixed woodlands on sandy plains derived from old levee deposits in the West Balonne Plains subregion	Sparse
6.5.2	Of concern	B	61.58	Eucalyptus populnea, Acacia aneura and/or E. melanophloia woodland on Quaternary sediments	Sparse
6.5.2	Of concern	C	10.56	Eucalyptus populnea, Acacia aneura and/or E. melanophloia woodland on Quaternary sediments	Sparse
6.5.3	Of concern	B	37.69	Eucalyptus populnea +/- Acacia spp. woodland on sandy plains in the east	Sparse
6.5.3	Of concern	C	less than 0.01	Eucalyptus populnea +/- Acacia spp. woodland on sandy plains in the east	Sparse
non-rem	None	X	4,454.66	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

Vegetation management wetlands are present on this property and are shown on the vegetation management supporting map in section 4.2 of this report.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or
2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

No records

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Non Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

Class A (with urban areas masked as per SPP): 1407.0ha

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 3 Plan: MGL20.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

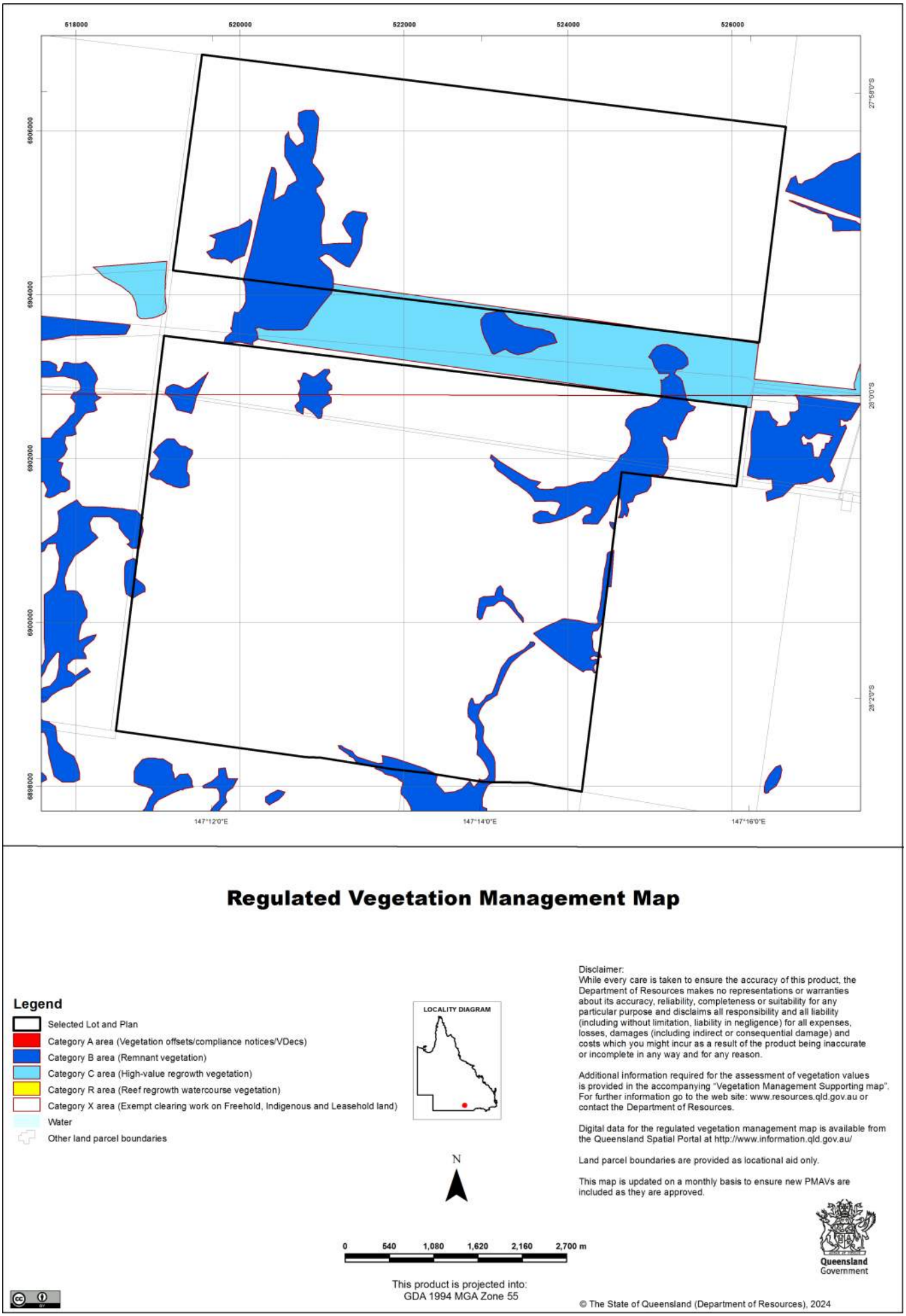
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

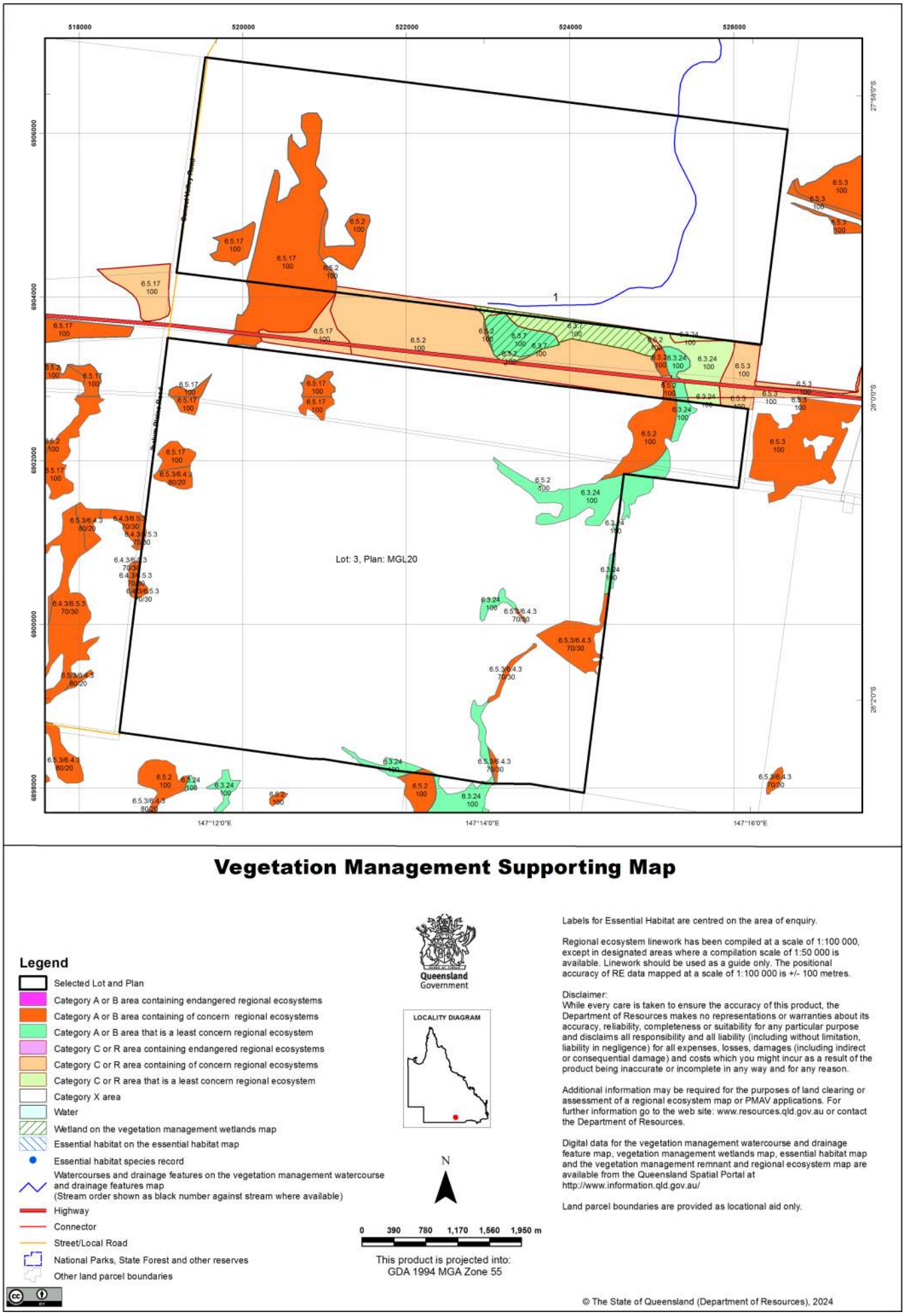
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

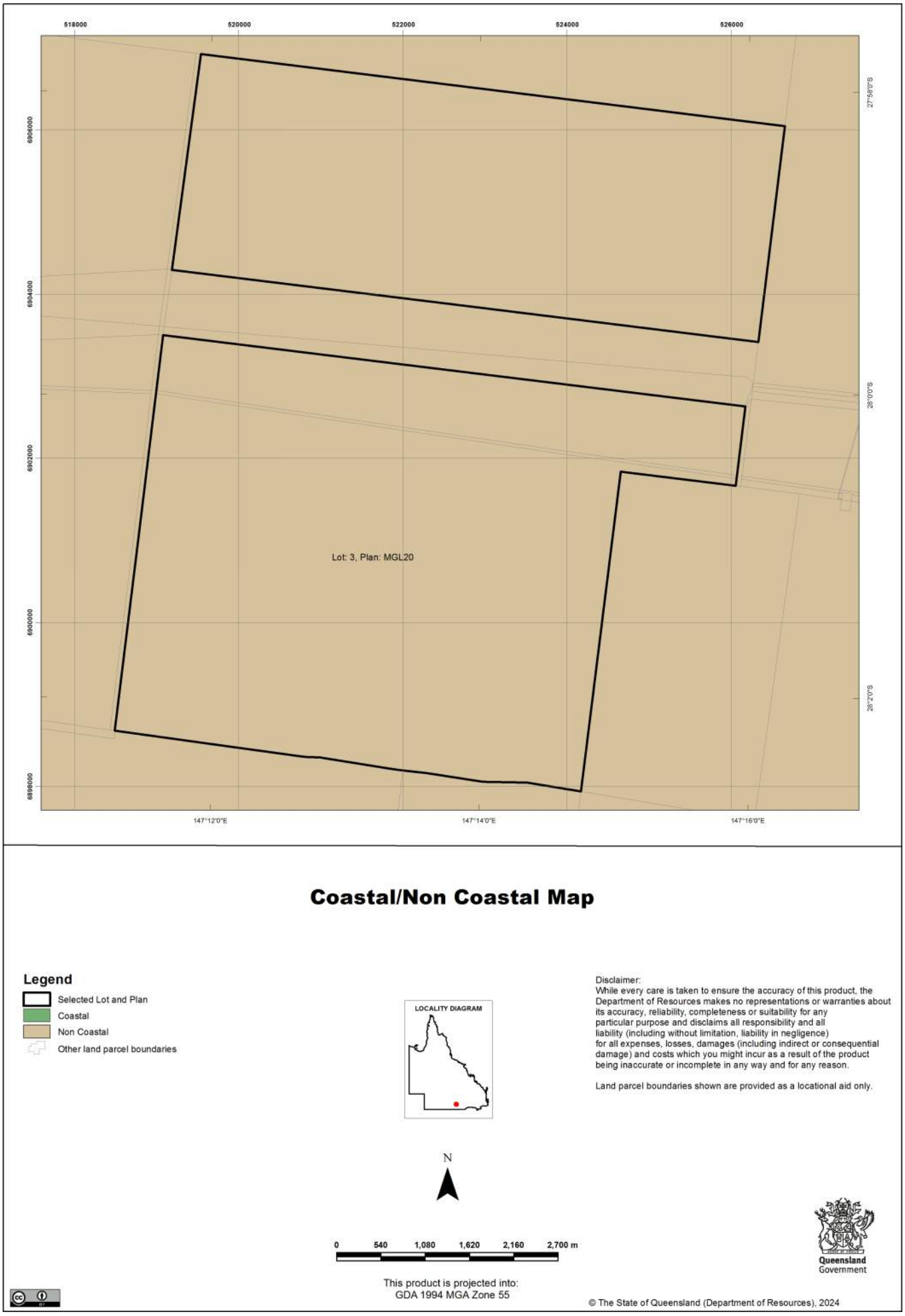
4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of a threatened or near threatened plant can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

LOCALITY DIAGRAM

N

0 360 720 1,080 1,440 1,800 m

This product is projected into:
GDA 1994 MGA Zone 55

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

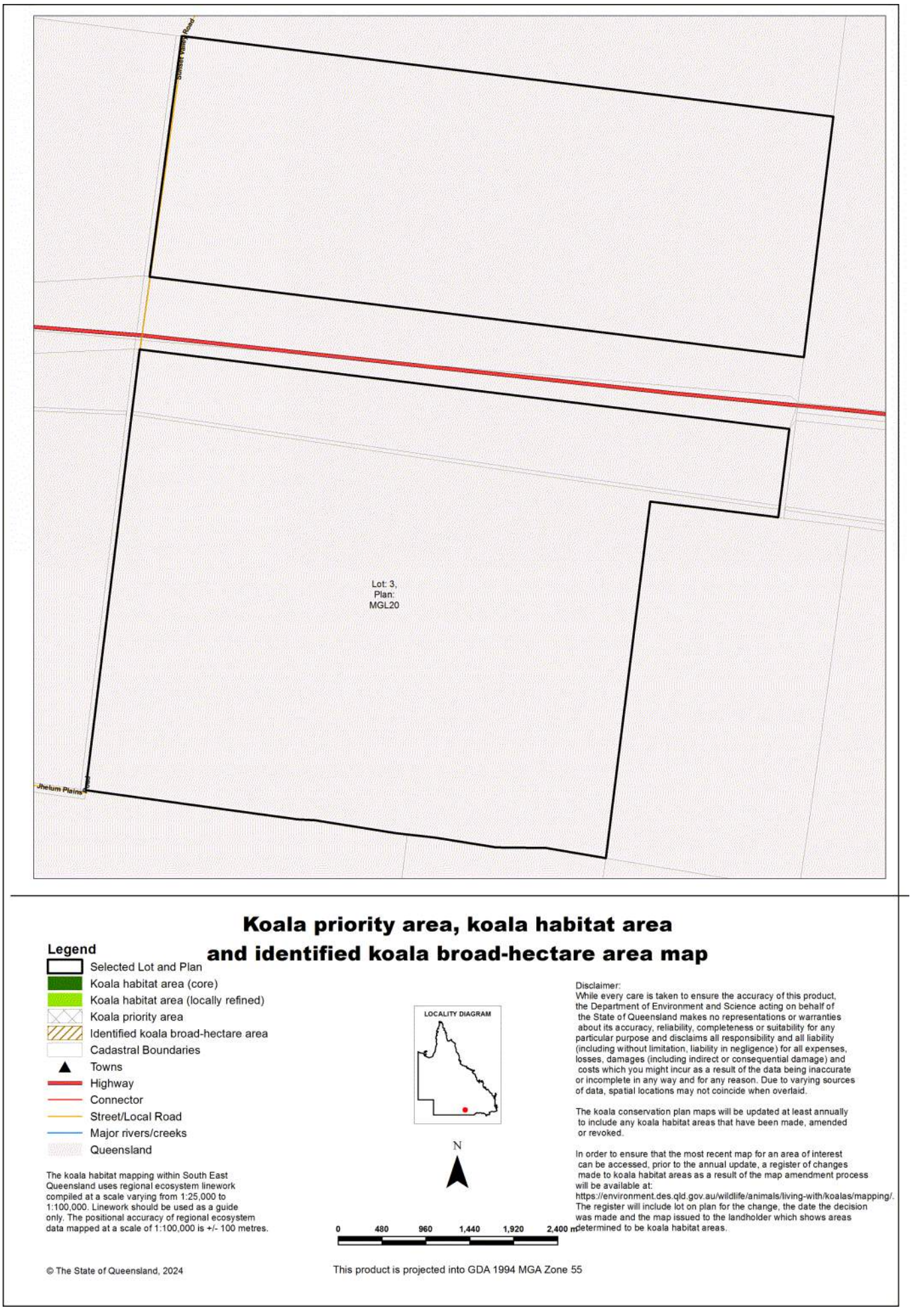
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 3 Plan: MGL20

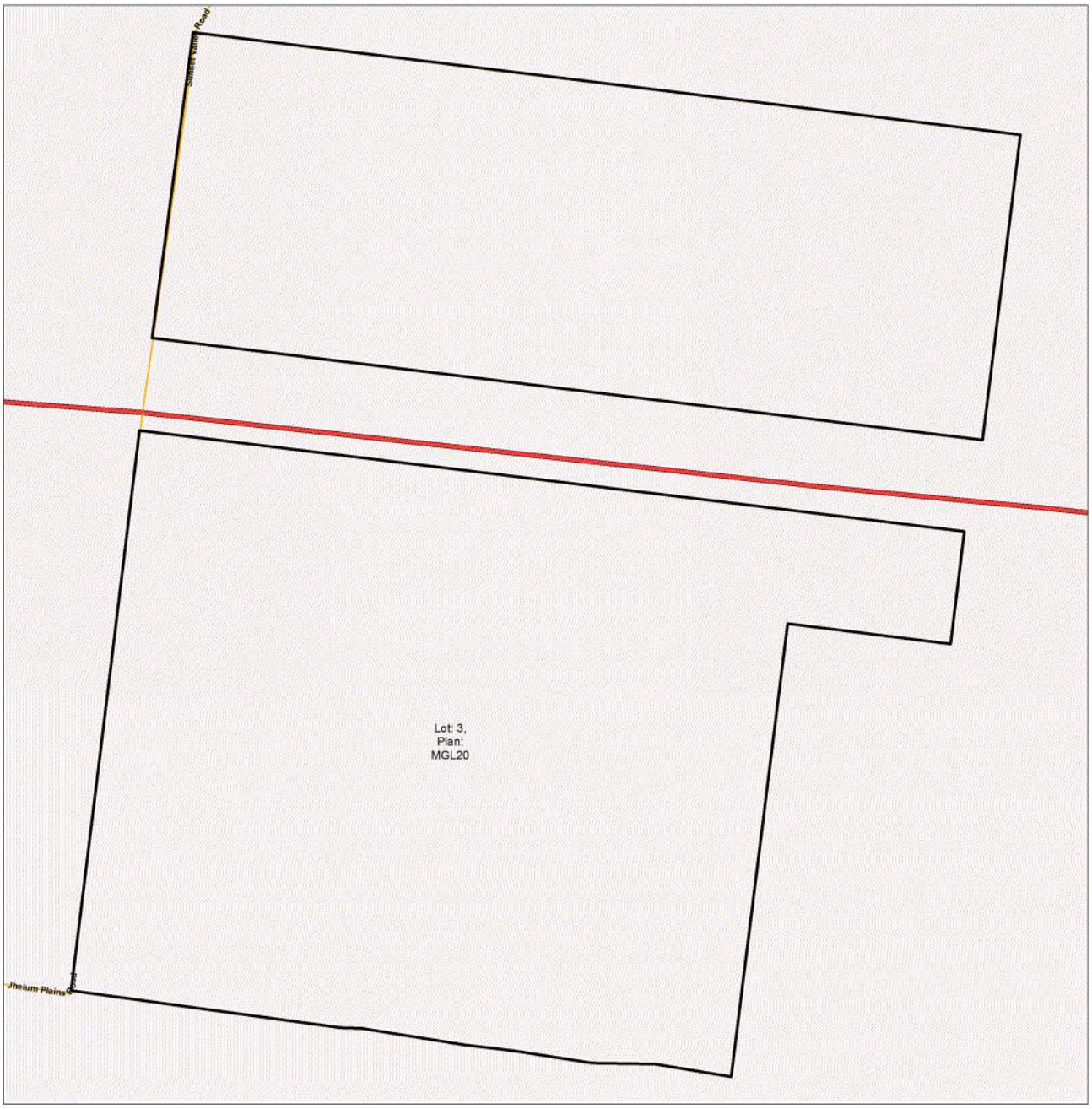
7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas

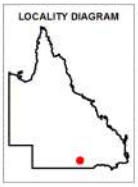


Koala habitat regional ecosystems for core koala habitat areas

Legend

- Selected Lot and Plan
- Koala habitat area (core)
- Towns
- Highway
- Connector
- Street/Local Road
- Major rivers/creeks
- Queensland

LOCALITY DIAGRAM



N

0 480 960 1,440 1,920 2,400 m

DISCLAIMER:

While every care is taken to ensure the accuracy of this product, the Department of Environment and Science acting on behalf of the State of Queensland makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason. Due to varying sources of data, spatial locations may not coincide when overlaid.

The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.

This product is projected into GDA 1994 MGA Zone 55

8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: All
Latitude: -28.0033
Longitude: 147.2276
Distance: 5
Email: maddy.warnick@rangeenviro.com.au
Date submitted: Wednesday 28 Feb 2024 12:52:11
Date extracted: Wednesday 28 Feb 2024 13:00:03

The number of records retrieved = 72

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill		C		1
animals	birds	Acanthizidae	*Aphelocephala leucopsis*	southern whiteface		V	V	1
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		1
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		1
animals	birds	Alcedinidae	*Dacelo novaeguineae*	laughing kookaburra		C		1
animals	birds	Ardeidae	*Ardea pacifica*	white-necked heron		C		1
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		1
animals	birds	Artamidae	*Artamus personatus*	masked woodswallow		C		1
animals	birds	Artamidae	*Artamus superciliosus*	white-browed woodswallow		C		1
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		1
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		2
animals	birds	Artamidae	*Gymnorhina tibicen*	Australian magpie		C		2
animals	birds	Cacatuidae	*Cacatua leadbeateri leadbeateri*	Major Mitchell's cockatoo		E	E	3
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		2
animals	birds	Cacatuidae	*Nymphicus hollandicus*	cockatiel		C		1
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		1
animals	birds	Campephagidae	*Coracina papuensis*	white-bellied cuckoo-shrike		C		1
animals	birds	Casuariidae	*Dromaius novaehollandiae*	emu		C		1
animals	birds	Climacteridae	*Climacteris picumnus*	brown treecreeper		C		1
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		2
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		1
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		2
animals	birds	Estrildidae	*Taeniopygia guttata*	zebra finch		C		1
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		1
animals	birds	Meliphagidae	*Acanthagenys rufogularis*	spiny-cheeked honeyeater		C		2
animals	birds	Meliphagidae	*Gavicalis virescens*	singing honeyeater		C		2
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		2
animals	birds	Meliphagidae	*Philemon citreogularis*	little friarbird		C		1
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		1
animals	birds	Meliphagidae	*Ptilotula penicillata*	white-plumed honeyeater		C		2
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		2
animals	birds	Oreoicidae	*Oreoica gutturalis*	crested bellbird		C		1
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		2
animals	birds	Petroicidae	*Microeca fascinans*	jacky winter		C		1
animals	birds	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler		C		2
animals	birds	Psittaculidae	*Aprosmictus erythropterus*	red-winged parrot		C		1
animals	birds	Psittaculidae	*Barnardius zonarius*	Australian ringneck		C		1
animals	birds	Psittaculidae	*Northiella haematogaster*	blue bonnet		C		1
animals	birds	Psittaculidae	*Platycercus adscitus*	pale-headed rosella		C		1
animals	birds	Psittaculidae	*Psephotellus varius*	mulga parrot		C		2
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		1
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		2
plants	land plants	Alismataceae	*Damasonium minus*	starfruit		SL		1/1
plants	land plants	Amaranthaceae	*Ptilotus modestus*			C		1/1
plants	land plants	Amaranthaceae	*Ptilotus polystachyus*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Asteraceae	*Actinobole uliginosum*	flannel cudweed		C		2/2
plants	land plants	Asteraceae	*Calotis cuneifolia*	burr daisy		C		1/1
plants	land plants	Asteraceae	*Calotis hispidula*	bogan flea		C		1/1
plants	land plants	Asteraceae	*Calotis lappulacea*	yellow burr daisy		C		1/1
plants	land plants	Asteraceae	*Hyalosperma semisterile*			C		1/1
plants	land plants	Asteraceae	*Leptorhynchos baileyi*			C		1/1
plants	land plants	Asteraceae	*Pterocaulon sphacelatum*	applebush		C		2/2
plants	land plants	Asteraceae	*Rhodanthe moschata*			C		1/1
plants	land plants	Asteraceae	*Soliva anthemifolia*	dwarf jo jo weed	Y			1/1
plants	land plants	Asteraceae	*Vittadinia sulcata*	native daisy		C		1/1
plants	land plants	Brassicaceae	*Harmsiodoxa blennodioides*	hairypod cress		C		1/1
plants	land plants	Brassicaceae	*Lemphoria andraeana*			C		1/1
plants	land plants	Chenopodiaceae	*Dysphania kalpari*			C		1/1
plants	land plants	Chenopodiaceae	*Maireana villosa*			C		1/1
plants	land plants	Chenopodiaceae	*Sclerolaena calcarata*	red burr		C		1/1
plants	land plants	Chenopodiaceae	*Sclerolaena convexula*			C		1/1
plants	land plants	Convolvulaceae	*Evolvulus alsinoides var. decumbens*			C		1/1
plants	land plants	Cyperaceae	*Cyperus dactylotes*			C		1/1
plants	land plants	Goodeniaceae	*Goodenia glabrata*			C		1/1
plants	land plants	Loranthaceae	*Lysiana linearifolia*			C		1/1
plants	land plants	Menyanthaceae	*Nymphoides crenata*	wavy marshwort		SL		1/1
plants	land plants	Myrtaceae	*Corymbia terminalis*			C		1/1
plants	land plants	Phrymaceae	*Mimulus prostratus*	small monkey flower		C		1/1
plants	land plants	Phrymaceae	*Peplidium foecundum*			C		1/1
plants	land plants	Phyllanthaceae	*Phyllanthus fuernrohrii*			C		1/1
plants	land plants	Solanaceae	*Solanum cleistogamum*			C		1/1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.*
The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.*
The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix D EMR/CLR and UXO Searches

Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454, Brisbane QLD 4001, AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE

ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Rowan Morrison
433 Logan Road
Stones Corner QLD 4120

Transaction ID: 50710098 EMR Site Id: 12 August 2021
Cheque Number:
Client Reference:

This response relates to a search request received for the site:

Lot: 3 Plan: MGL20
BALONNE HWY
BOLLON

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

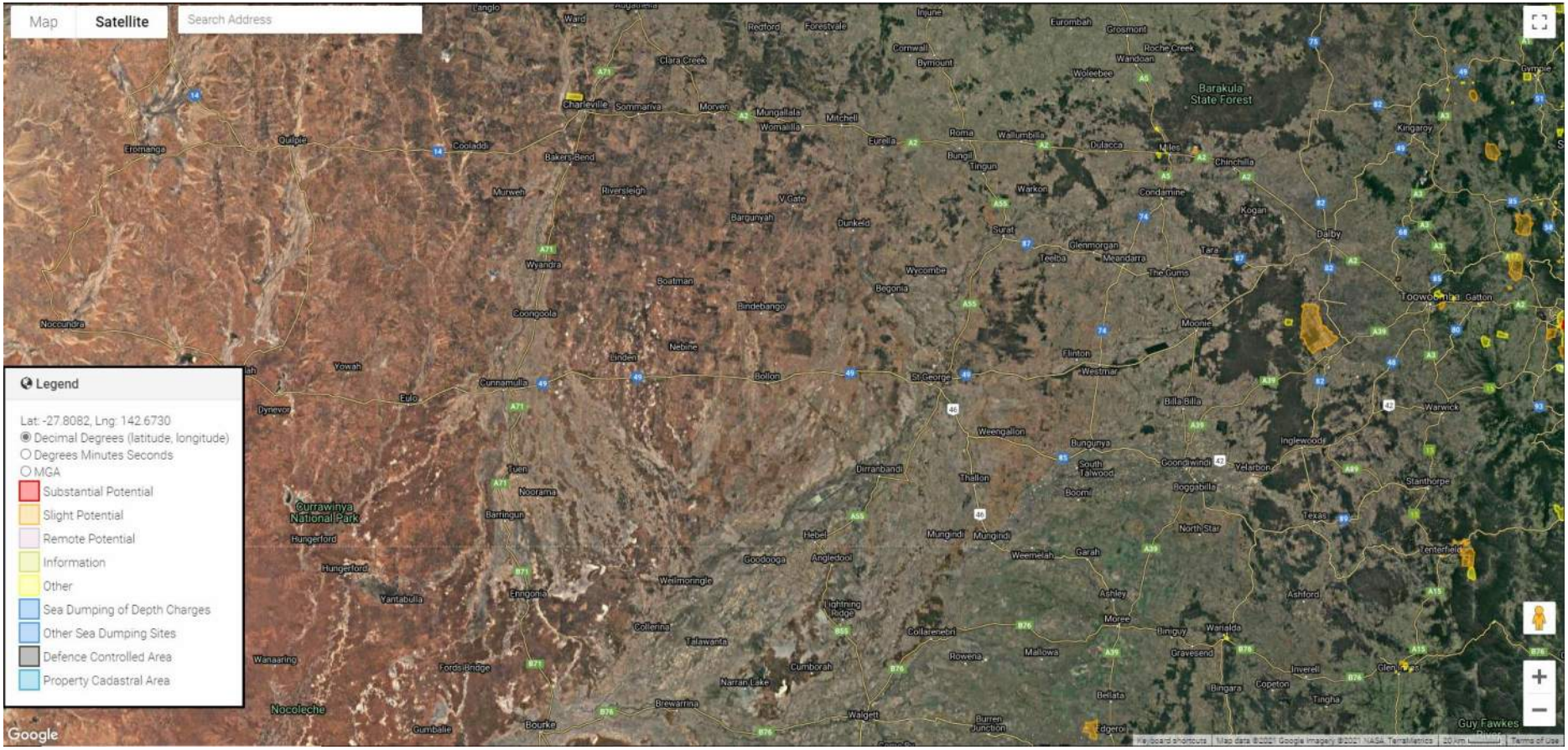
All search responses include particulars of land listed in the EMR/CLR when the search was generated.
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DES has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DES has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority

Unexploded Ordnance Database Search



Appendix E Heritage Database Searches

Cultural Heritage Database and Register Search Report

Search report reference number: 154513

The Aboriginal and Torres Strait Islander Cultural Heritage Database (cultural heritage database) and Aboriginal and Torres Strait Islander Cultural Heritage Register (cultural heritage register) have been searched in accordance with the location description provided, and the results are set out in this report.

The cultural heritage database is intended to be a research and planning tool to help Aboriginal and Torres Strait Islander parties, researchers, and other persons in their consideration of the cultural heritage values of particular areas.

The cultural heritage register is intended to be a depository for information for consideration for land use and land use planning, and a research and planning tool to help people in their consideration of the Aboriginal cultural heritage values of particular objects and areas.

Aboriginal or Torres Strait Islander cultural heritage which may exist within the search area is protected under the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* (the Cultural Heritage Acts), even if the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (the Department) has no records relating to it.

The placing of information on the database is not intended to be conclusive about whether the information is up-to-date, comprehensive or otherwise accurate.

Under the Cultural Heritage Acts, a person carrying out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage. This applies whether or not such places are recorded in an official register and whether or not they are located on private land.

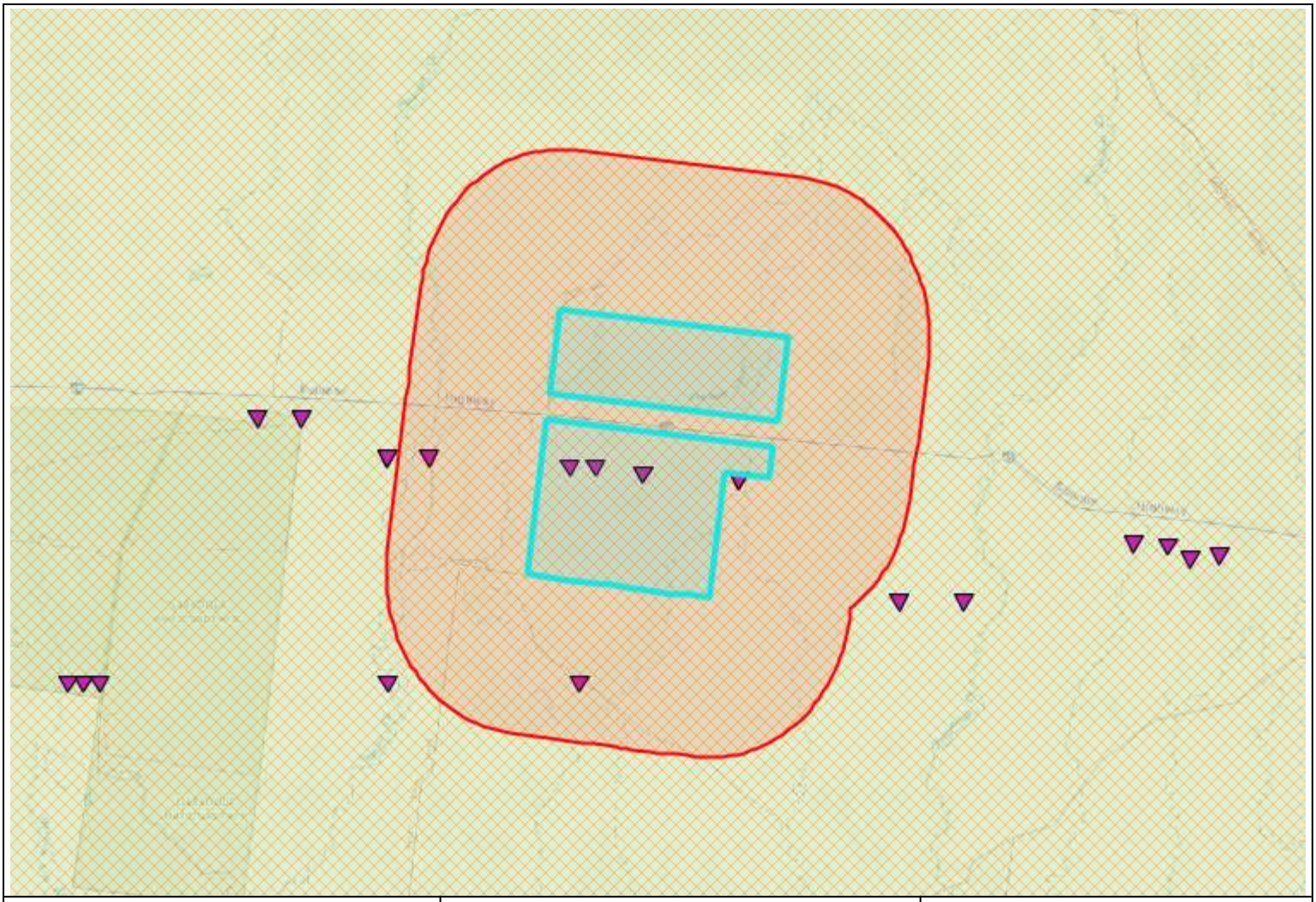
Please refer to the Department website https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-duty-of-care to obtain a copy of the gazetted Cultural Heritage Duty of Care Guidelines, which set out reasonable and practicable measure for meeting the cultural heritage duty of care.

In order to meet your duty of care, any land-use activity within the vicinity of recorded cultural heritage should not proceed without the agreement of the Aboriginal or Torres Strait Islander Party for the area, or by developing a Cultural Heritage Management Plan under Part 7 of the Cultural Heritage Acts.

The extent to which the person has complied with Cultural Heritage Duty of Care Guidelines and the extent the person consulted Aboriginal or Torres Strait Islander Parties about carrying out the activity – and the results of the consultation – are factors a court may consider when determining if a land user has complied with the cultural heritage duty of care.

Should you have any further queries, please do not hesitate to contact the department via email: cultural.heritage@dsdsatsip.qld.gov.au or telephone: 1300 378 401.

Cultural Heritage Database and Register Search Report



LEGEND

- CH Parties
- CH Bodies
- CHMPs
- Study Areas
- DLAs

Reference Number: 154513
Search Type: Lot/Plan
Lot: 3
Plan: MGL20
Shire: Balonne Shire

Buffer Distance: 5000m

Cultural Heritage Sites

- Pre-2015 Point Site
- Post-2015 Point Site
- Mitigated Point Site
- Pre-2015 Area Site
- Post-2015 Area Site
- Mitigated Area Site

Map Projection: Geographic Latitude & Longitude (GDA2020).

The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP) is the custodian of spatial data provided by various third parties for inclusion in the Aboriginal and Torres Strait Islander cultural heritage online portal. This includes spatial data provided by the National Native Title Tribunal and Aboriginal and Torres Strait Islander parties.

Features shown on this map have been obtained from available sources. It is possible that errors and omissions may exist. The DSDSATSIP disclaims any liability for any errors or omissions that appear in this document.

Map produced by the Cultural Heritage Unit, DSDSATSIP, Brisbane, Queensland, Australia on 28 February 2024.

Queensland Government

1:229,586

Metres 5,000 10,000

LOCALITY

Search report generated on Feb 28, 2024, 1:38 PM

Cultural heritage site points for the area:

Site ID	Latitude	Longitude	Date Recorded	Attribute	Cultural Heritage Party
GA:A20	-28.06857	147.204714	01/10/1983	Artefact Scatter	Kooma People #4 Part A
GA:A37	-28.011614	147.255463	01/07/1983	Isolated Find	Kooma People #4 Part A
GA:A38	-28.011614	147.255463	01/07/1983	Isolated Find	Kooma People #4 Part A
GA:A39	-28.009862	147.224945	01/07/1983	Isolated Find	Kooma People #4 Part A
GA:A40	-28.008092	147.201547	01/07/1983	Isolated Find	Kooma People #4 Part A
GA:A41	-28.00808	147.209685	01/07/1983	Isolated Find	Kooma People #4 Part A
GA:A42	-28.009862	147.224945	01/07/1983	Isolated Find	Kooma People #4 Part A
GA:A43	-28.005442	147.15679	01/07/1983	Isolated Find	Kooma People #4 Part A

There are no Aboriginal or Torres Strait Islander cultural heritage site polygons recorded in your specific search area.

Cultural Heritage Party/ies for the area:

Reference No.	Federal Court No.	Party Name	Contact Details
QCD2014/012 DET	QUD504/2011	Kooma People #4 Part A	Kooma Aboriginal Corporation PBC Cheryl Buchanan Phone: 0417 726 882 C/- Queensland South Native title Services PO BOX 10832, Adelaide St, BRISBANE QLD 4000 Email: cherylguwamu@gmail.com

Cultural Heritage Body/ies for the area:

Departmental Reference No.	Body Name	Contact Details	Registration Date
CHB019001	Kooma Aboriginal Corporation RNTBC	Kooma Aboriginal Corporation RNTBC 19 Hamlyn Rd OAKEY QLD 4401 Cheryl Buchanan Phone: 0417 726 882 Email: cherylguwamu@gmail.com Email: koomaac@gmail.com	16/10/2019

There are no Cultural Heritage Management Plans recorded in your specific search area.

There are no Designated Landscape Areas (DLA) recorded in your specific search area.

There are no Registered Cultural Heritage Study Areas recorded in your specific search area.

There are no National Heritage Areas (Indigenous values) recorded in your specific search area.

Glossary

Cultural Heritage Body: An entity registered under Part 4 of the Cultural Heritage Acts as an Aboriginal or Torres Strait Islander cultural heritage body for an area. The purpose of a cultural heritage body is to:

- identify the Aboriginal or Torres Strait Islander parties for an area
- serve as the first point of contact for cultural heritage matters.

Cultural Heritage Management Plan (CHMP): An agreement between a land user (sponsor) and Traditional Owners (endorsed party) developed under Part 7 of the Cultural Heritage Acts. The CHMP explains how land use activities can be managed to avoid or minimise harm to Aboriginal or Torres Strait Islander cultural heritage.

Cultural Heritage Party: Refers to a native title party for an area. A native title party is defined as:

- Registered native title holders (where native title has been recognised by the Federal Court of Australia).
- Registered native title claimants (whose native title claims are currently before the Federal Court of Australia).
- Previously registered native title claimants (the 'last claim standing') are native title claims that are no longer active and have been removed from the Register of Native Title Claims administered by the National Native Title Tribunal. Previously registered native title claimants will continue to be the native title party for that area providing:
    - there is no other registered native title claimant for the area; and
    - there is not, and never has been, a registered native title holder for the area.

The native title party maintains this status within the external boundaries of the claim even if native title has been extinguished.

Cultural heritage site points (pre 2015): Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as point data **before** 1 July 2015.

Cultural heritage site points (post 2015): Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as point data **after** 1 July 2015.

Cultural heritage site points (post 2015 mitigated): Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as point data after 1 July 2015 where the recorder has advised the department that the site has been mitigated.

Cultural heritage site polygons: Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as a polygon.

Designated Landscape Areas (DLA): Under the repealed *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*, an area was declared a 'designated landscape area' (DLA) if it was deemed necessary or desirable for it to be preserved or to regulate access.

Indigenous Protected Areas (IPA): Areas of land and sea managed by Indigenous groups as protected areas for biodiversity conservation through voluntary agreements with the Australian Government. For further information about IPAs visit https://www.environment.gov.au/land/indigenous-protected-areas

National Heritage areas: Places listed on the National Heritage List for their outstanding heritage significance to Australia and are protected under the *Environment Protection and Biodiversity Conservation Act 1999*. For further information about the National Heritage List visit https://www.environment.gov.au/heritage/about/national

National Heritage Areas (Indigenous values): Places listed on the National Heritage list (Indigenous values) are recognised for their outstanding Indigenous cultural heritage significance to Australia and are protected under the *Environment Protection and Biodiversity Conservation Act 1999.* These areas are now included in the cultural heritage

register.

Registered Cultural Heritage Study Areas: Comprehensive studies of Aboriginal and or Torres Strait Islander cultural heritage in an area conducted under Part 6 of the Cultural Heritage Acts for the purpose of recording the findings of the study on the register.

Traditional Use of Marine Resources Agreement (TUMRA): Areas subject to agreement between Great Barrier Reef Traditional Owners and the Australian and Queensland governments on the management of traditional use activities on their sea country. For further information about TUMRAs visit https://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements

World Heritage Areas: Places inscribed on the World Heritage List pursuant to the World Heritage Convention adopted by the United Nations Education, Scientific and Cultural Organisation (UNESCO) and are protected under the *Environment Protection and Biodiversity Conservation Act 1999*. For further information about World Heritage places in Queensland visit https://parks.des.qld.gov.au/management/managed-areas/world-heritage-areas

Disclaimer: *The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is the custodian of spatial data and information provided by various third parties for inclusion in the Aboriginal and Torres Strait Islander cultural heritage online portal. This includes spatial data provided by the National Native Title Tribunal and Aboriginal and Torres Strait Islander parties. Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is not responsible for the accuracy of information provided by third parties or any errors in this search report arising from such information.*

Appendix F Qualitative Risk Assessment Tool

Qualitative Measures of Consequence

Consequence	Natural Environment	Legal/Government	Community/Reputation/Media
Insignificant	Limited damage to minimal area of low significance.	Low-level legal issue. On the spot fine. Technical non-compliance, prosecution unlikely. Ongoing scrutiny/attention from regulator.	Low level social impacts. Public concern restricted to local complaints. Could not cause injury or disease to people.
Minor	Minor effects on biological or physical environment. Minor short-medium term damage to small area of limited significance.	Minor legal issues, non-compliances, and breaches of regulation. Minor prosecution or litigation possible. Significant hardship from regulator.	Minor to medium-term social impact on local population. Could cause first aid injury to people. Minor, adverse local public or media attention or complaints.
Moderate	Moderate effects on biological or physical environment (air, water) but not affecting ecosystem functioning. Moderate short-medium term widespread impacts (e.g., significant spills).	Serious breach of regulation with investigation or report to authority with prosecution or moderate fine possible. Significant difficulties in gaining approvals.	Ongoing social issues. Could cause injury to people which requires medical attention. Attention from regional media and/or heightened concern by local community. Criticism by NGOs. Environmental credentials moderately affected.
Major	Serious environmental effects with some impairment of ecosystem function. Relatively widespread medium-long term impacts.	Major breach of regulation with potential major fine and/or investigation and prosecution by authority. Project approval seriously affected.	Ongoing serious social issues. Could cause serious injury or disease to people. Significant adverse national media/pubic or NGO attention. Environmental credentials significantly affected.
Catastrophic	Very serious environmental effects with impairment of ecosystem function. Long term widespread effects on significant environment (e.g., National Park).	Investigation by authority with significant prosecution and fines. Very serious litigation, including class actions. License to operate threatened.	Very serious widespread social impacts with potential to significantly affect the wellbeing of the local community. Could kill or permanently disable people. Serious public or media outcry (international coverage). Damaging NGO campaign. Reputation severely damaged.

Qualitative Measures of Likelihood

Descriptor	Description	Guideline
Almost certain	Consequence is expected to occur in most circumstances	Occurs more than one per month
Likely	Consequence will probably occur in most circumstances	Occurs once every 1 month to 1 year
Occasionally	Consequence should occur at some time	Occurs once every 1 year to 10 years
Unlikely	Consequence could occur at some time	Occurs once every 10 years to 100 years
Rare	Consequence may only occur in exceptional circumstances	Occurs less than once every 100 years

Qualitative Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	High	High	Extreme	Extreme	Extreme
Likely	Moderate	High	High	Extreme	Extreme
Occasionally	Low	Moderate	High	Extreme	Extreme
Unlikely	Low	Low	Moderate	High	Extreme
Rare	Low	Low	Moderate	High	High

range
environmental
consultants

www.rangeenviro.com.au

BRISBANE
Unit 1/7 Birubi Street
Coorparoo Qld 4151

TOOWOOMBA
Office A, 189 Hume St
Toowoomba QLD 4350

T 07 4588 6711
E admin@rangeenviro.com.au

APPENDIX F – SITE BASED MANAGEMENT PLAN

Range Environmental Consultants

Site Based Management Plan

Rockville Quarry

CLIENT: TIERNEY CRUSHING AND TRANSPORT PTY LTD

PROJECT NO.	**J001483**
STATUS	**FINAL**
DATE	**8/08/2024**

rangeenviro.com.au

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Document Control

Version	Purpose	Lead Author	Reviewer	Approved by	Date
1.	Final Report	MJW	RJM	LMT	10/05/2024
2.	Final Report (Client's comments)	MJW	RJM	LMT	8/08/2024

Table of Contents

1 Overview

1.1 Background

This Site Based Management Plan (SBMP) provides an environmental management framework for the proposed expansion of Tierney Crushing and Transport Pty Ltd's existing Rockville Quarry. The existing quarry is located on a portion of a land parcel formally described as Lot 3 MGL20 (hereafter 'the site') (Figure 1).

The proposed expansion includes an increased rate of extraction, screening and crushing activities across an increased quarrying footprint (hereafter 'the total extractive activities area'). The proposed expansion layout is shown at Figure 2.

The proposed operations at the site are considered to present a low risk of harm to local environmental values with the implementation of this SBMP. A copy of the SBMP shall be kept on site at all times.

1.2 Scope

The scope and application of this SBMP is provided in Table 1.

Table 1 Scope and application of this SBMP

Question	Answer
Who?	This SBMP applies to all personnel (staff, inspectors, sub-contractors, site visitors and other personnel) at the quarry under the control of Tierney Crushing and Transport.
What?	This SBMP applies to all environmental aspects of operational and maintenance activities for the quarrying activity.
When?	This SBMP applies during the operations and rehabilitation phase of the quarry.
Where?	This SBMP applies to the total extractive activities area located on a portion of a land parcel formally described as Lot 3 MGL20 (Figure 2).
Why?	The purpose of this SBMP is to minimise the risk of environmental harm and to satisfy legal and other obligations for environmental protection and general environmental duty.

1.3 SBMP Objectives

The objectives of this SBMP are to:

- Describe the relevant environmental values and quarrying operations.
- Provide site specific control measures to minimise the risk of adverse environmental impact during operational activities.
- Define roles, responsibilities, and timing for the implementation of environmental control measures.
- Provide mechanisms for incident management and monitoring, review, and continual improvement of environmental performance at the site.

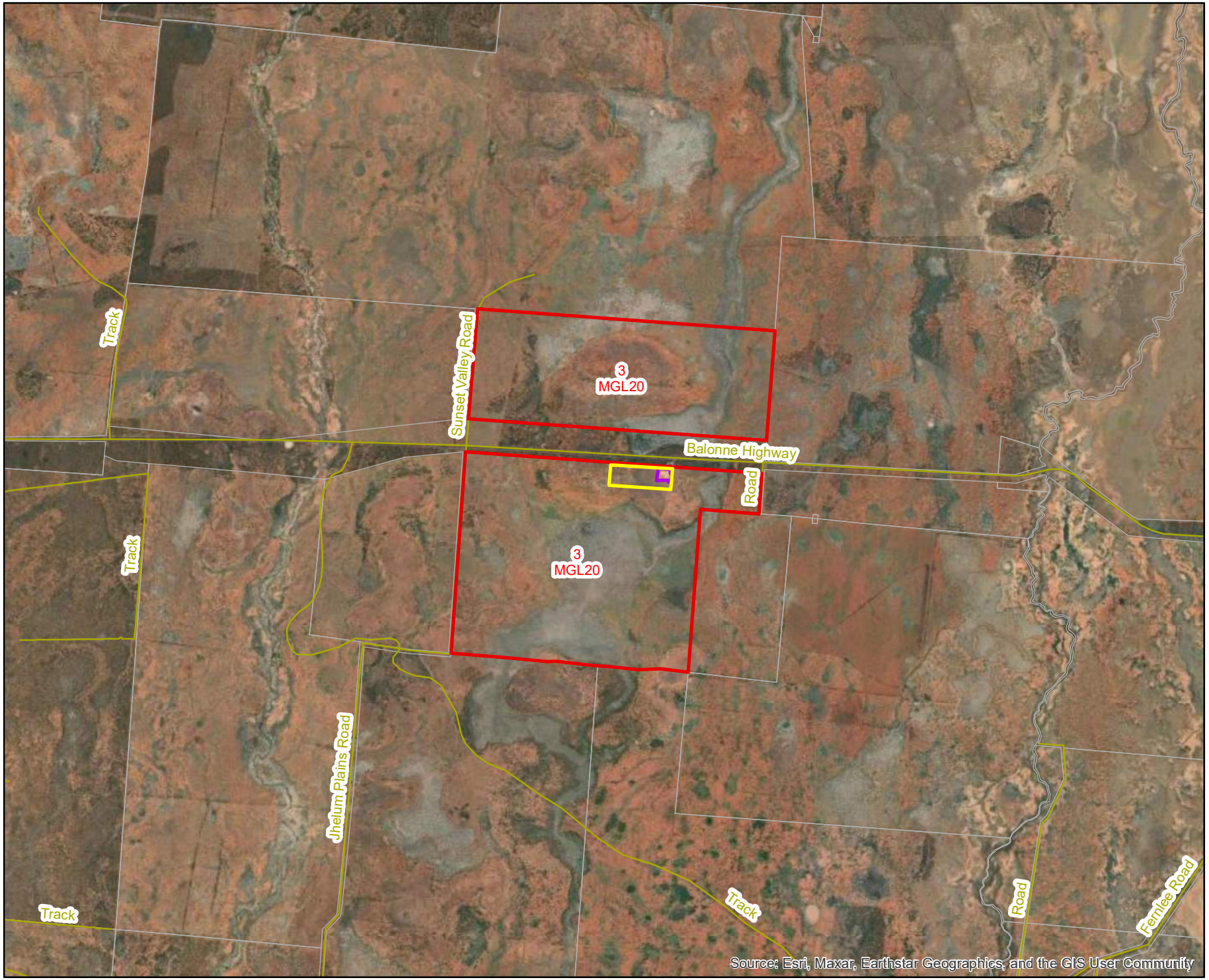

Figure 1
Site Locality

Project: Site Based Management Plan

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 20/09/2023
Approved by: RJM Date: 20/09/2023

Metres
0 1,600 3,200

Legend

- Cadastre
- Site boundary
- Roads
- Total Extractive Activities Area
- Existing Extractive Activities Area

Source: Cadastral data sourced from DNRME (2023).

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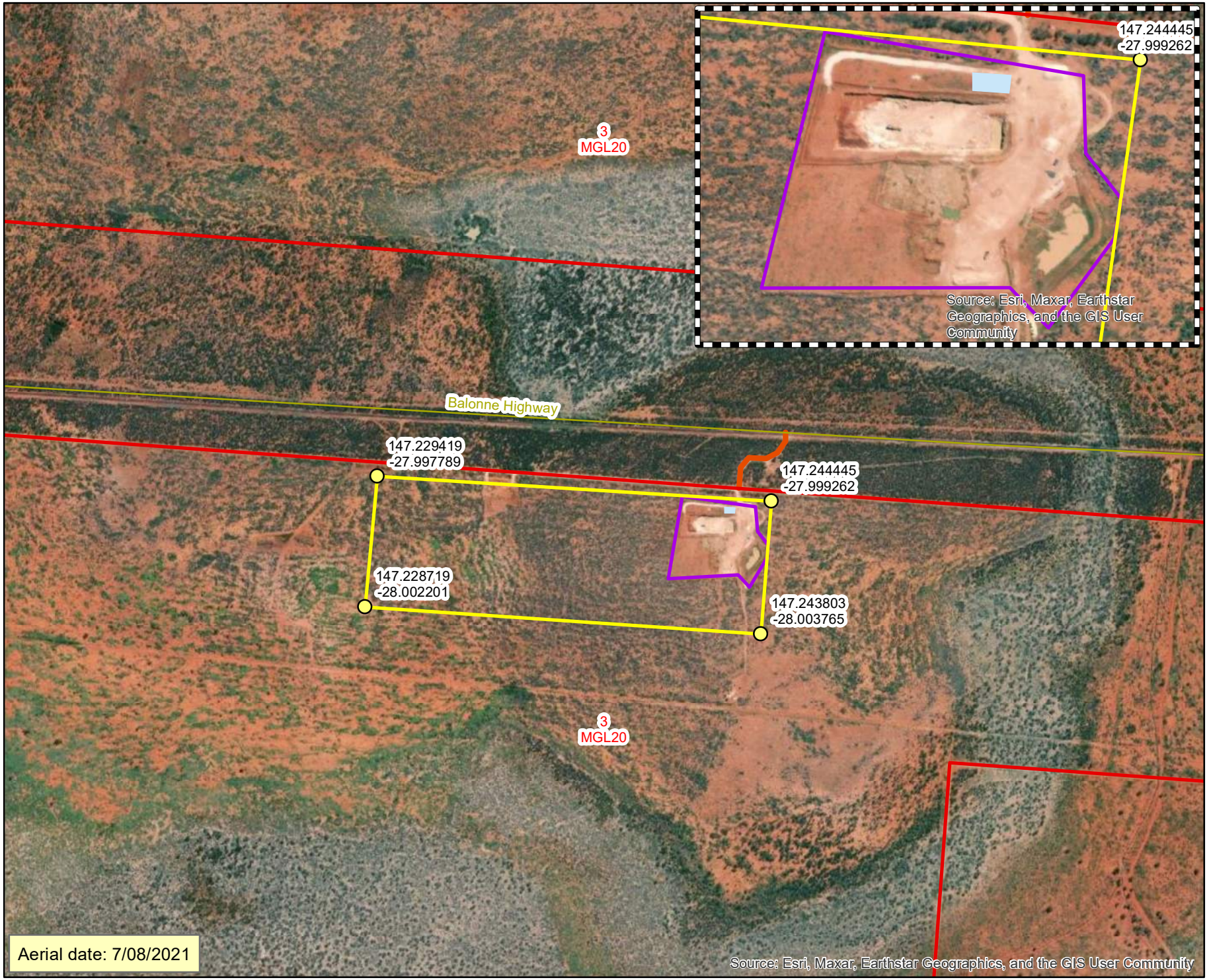

Figure 2
Total Extractive Activities Area

Project: Site Based Management Plan

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 30/08/2023
Approved by: RJM Date: 30/08/2023

0 260 520 Metres

Legend

- Cadastre
- Roads
- Site boundary
- Total Extractive Activities Area
- Existing Extractive Activities Area
- Existing Site Access
- Site office/Diesel AST

The content of this document includes third party data. Range Environmental Consultants does not gaurantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2023).

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2 Description of Proposed Operations

An overview of the proposed quarrying operations is provided at Table 2. The proposed expansion layout is provided at Figure 2.

Table 2 Site Operations

Aspect of Operations	Description
Facility Operator and Applicant	• Tierney Crushing and Transport Pty Ltd
Registered Suitable Operator No. (RSO)	• Andrew Tierney – RSO number 694087
Site	• Lot 3 MGL20
Annual Throughput	• The predicted annual throughput of gravel is up to 300,000t.
ERAs	• ERA 16 (2)(b) – extracting, other than by dredging, in a year, more than 100,000t but not more than 1,000,000t. • ERA 16 (3)(b) – screening, in a year, more than 100,000t but not more than 1,000,000t.
Method of Operations	• Blasting, extracting, crushing, screening, and washing gravel onsite. • The total extractive activities area will have an area of approximately 74.8 ha. • Blasting is proposed to be undertaken approximately three (3) times per year.
Plant, Equipment, and Infrastructure	• Extraction pit. • Stockpile pads. • Detention basin. • Four (4) sediment basins. • Dirty water drains. • Mobile gravel crushing and screening plant and equipment. • Haulage trucks. • Excavators. • Site office. • Diesel storage - 10,000L self-bunded aboveground storage tank (AST).
Hours of operation and staffing	• Three (3) staff members onsite. • Extraction, crushing and screening activities and internal haulage shall be limited to 5:30am to 10:00pm, Monday to Sunday (excluding public holidays). • Drilling activities shall be limited to 7:00am to 6:00pm, Monday to Sunday. • Blasting operations will be limited to 9:00am and 3:00pm, Monday to Friday and between 9:00am and 1:00pm on Saturdays. • Haulage Trucks will be able to access the site from 5:00am to 10:00pm, Monday to Sunday (excluding public holidays). • Servicing of plant/equipment permitted 24/7.
Wastes	• No significant wastes are expected to be generated by the proposed operations.

	• General wastes from the site office will be stored in bins and removed from site for disposal or recycling as required. • Effluent (Regulated Waste) from staff amenities (black and grey water) will be stored in a holding tank and collected as required by a Regulated Waste Contractor for offsite disposal. • Regulated wastes produced from minor onsite servicing of mechanical plant and equipment will either be removed by the service technicians at the end of the task/day (whichever occurs first) or temporarily stored undercover on a bunded pallet until removal offsite by a regulated waste contractor can occur. • Screened reject material will be retained and utilised in future progressive rehabilitation works for disturbed areas at the site.

2.1 Maintenance

To ensure optimum performance of critical equipment in mitigating the environmental impacts of the quarry's operations, routine inspection and maintenance activities shall be scheduled and implemented.

Maintenance programs and schedules shall be developed for the quarrying equipment and site infrastructure in accordance with legislative requirements and manufacturer's specifications. The purpose of site maintenance is to minimise the risk of equipment failure that could result in injury to people, impacts to site operations and service delivery and/or adverse environmental impacts. Maintenance records shall be retained as per Section 11.

3 Environmental Values, Potential Impacts and Mitigation Measures

3.1 Environmental Values

The relevant environmental values of the site and local area with regards to the proposed quarrying operations are described in Table 3.

Table 3 Environmental values

Environmental value	Description
Biodiversity	Category B and Category C Regulated Vegetation, comprising of the following Regional Ecosystems (RE), are mapped north of the total extractive activities area: • Category B Of Concern RE 6.5.2. • Category B Least Concern RE 6.3.24. • Category C Of Concern RE 6.5.2. • Category C Least Concern RE 6.3.7.
Surface water	The site is located in the Lower Mungallala and Wallam Creeks catchment of the Warrego, Paroo and Bulloo Rivers and Nebine, Mungallala and Wallam Creeks basins. The site is intersected by two (2) unnamed drainage features that drain to the north-east where they enter Mungallala Creek located approximately 8.7 km east of the total extractive activities area. Vincent Valley, mapped as MSES – Regulated vegetation (intersecting a watercourse), occurred in the northern land parcel of the site. There are no watercourses mapped within the total extractive activities area.
Groundwater	The bore log for the closest registered groundwater bore to the site shows that groundwater is artesian. The shallowest aquifer recorded in the area was 645 m below ground level in the Hooray Sandstone formation.
Soil	Bureau of Rural Sciences (2009) generally describes soils within the total extractive activities area as red massive earths.
Amenity (air, noise, and light)	Ambient air quality is expected to be high and ambient light and noise levels of the local area are expected to be moderate to reflect the rural area. The site is surrounded by rural zoned properties predominately used for grazing land uses. Balonne Highway occurs approximately 190 m north of the total extractive activities area. The closest sensitive receptor is an isolated rural dwelling located approximately 6.6 km north-east of the total extractive activities area (Figure 3).

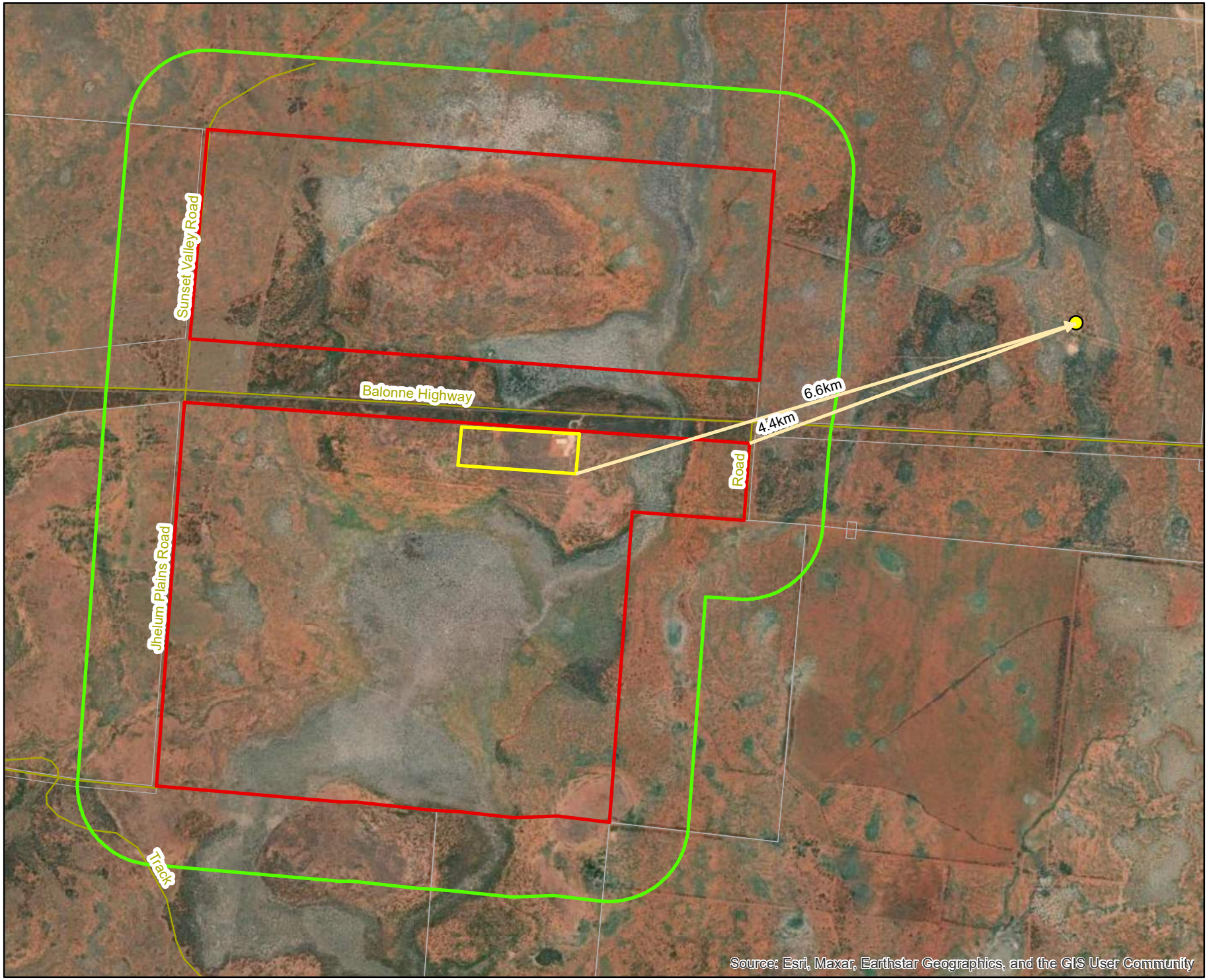

Figure 3 Sensitive Receptors

Project: Site Based Management Plan

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 21/09/2023
Approved by: RJM Date: 21/09/2023

Metres
0 870 1,740

Legend

- Cadastre
- Roads
- Site boundary
- 1km buffer
- Total Extractive Activities Area
- Nearest sensitive receptor

Source: Cadastral data sourced from DNRME (2023).

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3.2 Potential Impacts, Risks and Mitigation Measures

The potential impacts to environmental values, associated risk rating and key mitigation measures are outlined in Table 4 below. Reference should be made to the Environmental Control Plans (ECPs) at Section 4.3 for full details of mitigation measures.

Table 4 Potential impacts, risk rating and key mitigation measures

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
Land	Spill/leak from the diesel AST, during refuelling, plant and equipment maintenance activities or equipment failure causes release of hydrocarbons to soil.	Unlikely	Insignificant	Low	• The diesel AST shall be self-bunded. • Diesel shall be stored in accordance with *AS1940-2017 The storage and handling of flammable and combustible liquids.* • Mechanical repairs and servicing of plant and equipment will be undertaken offsite. • Plant and equipment shall be maintained in accordance with manufacturer's specifications to prevent spills and leaks of hydrocarbons. • Spill kits shall be available in strategic locations at the site (e.g., at the diesel AST). • Wastes shall be stored to prevent leakage to the environment. • No onsite waste disposal shall be permitted. • No significant risk of land contamination was identified for the proposed quarrying operations from accidental spills/leaks.
	Poor management/maintenance of the effluent storage tank causes release to land that adversely affects soil quality.	Rare	Insignificant	Low	• The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • Effluent in the tank shall be removed as required by a regulated waste contractor. • No significant risk of impact to land from effluent storage is anticipated.
	Erosion of soil by wind or water in disturbed areas of land within the total extractive activities area.	Occasionally	Insignificant	Low	• Disturbed areas will be progressively rehabilitated in accordance with the SBMP. • The nearest mapped creek (Paterson Creek) is located approximately 7 km to the west of the site. • No significant erosion or sedimentation runoff is anticipated.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment

Water	Poor management of disturbed areas and stormwater causes a release of sediment laden stormwater to the Lower Mungallala and Wallam Creeks catchment.	Occasionally	Insignificant	Low	• Disturbed areas will be progressively rehabilitated in accordance with the SBMP.
					• The total extractive activities area is at least 7 km from the nearest creek.
					• Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan as follows:
					  ◦ A detention basin shall be established in the western portion of the total extractive activities area (Figure 2) to mitigate median peak runoff flows. Detained runoff shall be discharged to the north through a pipe outlet.
					  ◦ Four (4) sediment basins shall be established across the total extractive activities area (Figure 2) to mitigate sediment loads leaving the site.
					  ◦ Dirty water drains shall be established across the total extractive activities area to convey runoff internal to the total extractive activities area to the sediment basins.
					• No significant impacts to the environmental values of the Lower Mungallala and Wallam Creeks catchment are anticipated.

	Spill/leak from the diesel AST, during refuelling, plant and equipment maintenance activities or equipment failure causes release of hydrocarbons to waters.	Unlikely	Insignificant	Low	• The diesel tank shall be self-bunded. • Diesel shall be stored in accordance with *AS1940-2017 The storage and handling of flammable and combustible liquids.* • The diesel AST shall not be located near a stormwater drain or watercourse. • Groundwater is deep and at a low risk of impact by the diesel AST. • Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan.

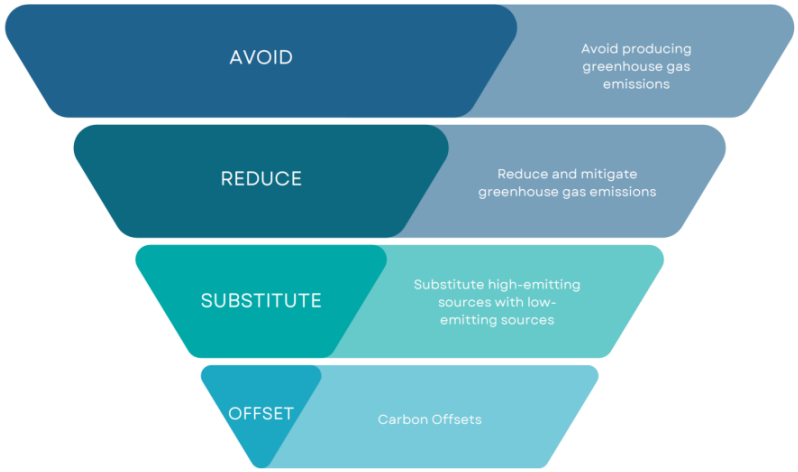
Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					• Plant and equipment shall be maintained in accordance with manufacturer's specifications to prevent spills and leaks of hydrocarbons. • No significant risk of stormwater, surface water or groundwater contamination was identified for the proposed quarrying activities.
	Poor management/maintenance of the effluent storage tank causes a release to waters.	Rare	Insignificant	Low	• Effluent shall be collected as required by a regulated waste contractor. • The effluent storage tank shall include a high-level alarm to minimise the risk of the tank overflowing. • No significant risk of impact to stormwater, surface water or groundwater from effluent storage is anticipated.
Amenity (Noise, Air, Greenhouse Gas and Light)	Noise emissions from mechanical plant and equipment, vehicle movements and extractive industry processes (blasting, crushing, and screening) causes nuisance at noise sensitive receptors.	Unlikely	Insignificant	Low	• The Rural zone code under the Balonne Planning Scheme 2019 outlines a minimum separation distance of 1000 m for hard rock extraction activities from a residential or other sensitive land use. Noise amenity is likely to be protected at the nearest sensitive receptor by the large separation distance of 6.6 km (Figure 3). • Section 12 of the CCAA (2015) guideline states that a separation distance of up to 2 km from a hard rock quarry in flat terrain will be adequate for achieving the noise criteria outlined at Table 1 of the guideline. There is a large available separation distance of 6.6 km to the nearest noise sensitive receptor from the total extractive activities area (Figure 3). • No complaints have been received regarding current quarrying operations at the site. • Operating hours shall occur within the hours outlined at Table 2. • Plant and equipment shall be maintained in accordance with manufacturer's specifications to reduce noise emissions.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					• No significant impacts to amenity in relation to noise emissions are anticipated with the implementation of the management measures outlined in the SBMP and the adequate separation distances.
	Overpressure from blasting activities causes environmental nuisance at sensitive receptors or compromises infrastructure integrity.	Rare	Insignificant	Low	• Infrastructure integrity and amenity are likely to be protected at the nearest sensitive receptor by the large separation distance of 6.6 km (Figure 3). • Blasting is likely to occur approximately three (3) times per year at the site. • The blasting contractor shall undertake the activities in accordance with their blast management plan and procedures. • No significant impacts to amenity in relation to air blast overpressure are anticipated.
	Fly rock from blasting activities creates an offsite safety risk.	Rare	Insignificant	Low	• Infrastructure integrity and amenity are likely to be protected at the nearest sensitive receptor by the large separation distance of 6.6 km (Figure 3). • Blasting is likely to occur approximately three (3) times per year at the site. • The blasting contractor shall undertake activities in accordance with their blast management plan and procedures. • No significant impacts to public safety by fly rock at offsite locations is anticipated.
	Fugitive dust emissions from loading gravel, haulage activities and wind erosion of exposed surfaces causes nuisance at sensitive receptors.	Unlikely	Insignificant	Low	• The Rural zone code under the Balonne Planning Scheme 2019 outlines a minimum separation distance of 1000 m for hard rock extraction activities from a residential or other sensitive land use. Air quality amenity at the nearest sensitive receptor will be preserved by the large separation distance of 6.6 km and existing woody vegetation (Figure 3). • Water down of haulage routes at the site shall be undertaken as required to minimise dust emissions from vehicle movements.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					• No complaints have been received regarding current quarrying operations at the site. • Significant impacts to air quality from the proposed quarrying activities are unlikely to occur with the implementation of the management measures outlined in the SBMP and the adequate separation distances.
	GHG emissions are released to the atmosphere as a direct result of the activity (i.e., Scope 1 under the DESI's GHG Guideline) that significantly contribute to climate change.	Unlikely	Insignificant	Low	The following information was collated to respond to Table 3 of the DESI's Greenhouse gas emissions Guideline (2024) regarding the application requirements for low emitters (i.e., generate <25,000t CO2-e per year): • Appendix 2 under the DESI's Emission scores profile of environmentally relevant activities (2024) does not list 'Greenhouse Levels' for ERA 16 as a contaminant to be considered when determining an emissions score for ERA 16. • Quantitative GHG emissions assessments for other quarries with a proposed annual extraction rate of 475,000t and 600,000t were calculated to generate 3004t CO2-e/year and 3296t CO2-e/year respectively (Edge Environmental, 2015 and NSW DPH&I 2024). Both example quarry assessments included vegetation clearing and extraction and screening operations. Based on GHG emissions calculations from these similar projects, the expected GHG emissions (Scope 1 and Scope 2) from the proposed Rockville Quarry is likely to be <3000t CO2-e/year (i.e., a low emitter). • The Department considered that the calculated 3296 CO2-e/year from the proposed 600,000t annual extraction operation would provide a negligible contribution to Australia's GHG emissions (NSW DPH&I 2024). • The conduct of ERA 16 (2)(b) and ERA 16 (3)(b) to extract and screen up to 300,000t/year at the site presents a low risk of impact to GHG emissions and is

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment

					unlikely to significantly contribute to climate change impacts on Queensland's environmental values.
					• The following mitigation measures shall be used at the site to minimise GHG emissions and improve future GHG emissions:
					  • GHG emissions for the site shall adhere to the DESI's GHG abatement hierarchy as far as reasonably practicable (Figure 4).
					  • Reduce vehicle idling time.
					  • Optimise and schedule vehicle operations to reduce fuel consumption.
					  • Minimise transportation distances and optimise supply chains to reduce fuel consumption where reasonably practicable.
					  • Use local materials and resources to cut down on transportation-related emissions where reasonably practicable.
					  • Maintain plant and equipment in accordance with the manufacturer's recommendations.
					  • Consider GHG emissions when purchasing new plant and equipment.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					 ***Figure 4 GHG abatement hierarchy (DESI, 2024)***
	Light emissions from trucks accessing/leaving the site between 5:00am and 7:00pm causes nuisance at sensitive receptors.	Unlikely	Insignificant	Low	• Extensive areas of woody vegetation are located between the total extractive activities area and the nearest sensitive receptor that will assist in buffering light emissions from trucks exiting the site onto Balonne Highway. • Outdoor lighting shall be designed, installed, operated, and maintained in accordance with Australian Standard *AS4282-2019 control of the obtrusive effects of outdoor lighting.*

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
Waste	General and Regulated Wastes become wind-blown or entrained in runoff.	Unlikely	Insignificant	Low	• Wastes or other materials shall not be burnt at the site. • Bins shall be covered and emptied regularly to prevent odour emissions and windblown litter. • Waste management for the proposed quarrying operations is unlikely to present a significant risk of environmental impact.
Biodiversity	Clearing of protected vegetation communities (Regional Ecosystems or TECs).	Rare	Insignificant	Low	• The total extractive activities area is restricted to an area mapped as Category X non-remnant vegetation. • The total extractive activities area has strategically been located a minimum distance of 50m from mapped Category C vegetation. Therefore, the remnant vegetation will be avoided in accordance with Australian Standard *AS4970-2009: Protection of trees on development sites.* • The site access track, located within mapped Category C vegetation, is existing and will require no further vegetation clearing. • No clearing of protected vegetation communities, including Regional Ecosystems or TECs, is proposed. • No significant impacts to remnant vegetation are anticipated.
	Harm to threatened flora and fauna species and their habitat.	Rare	Unlikely	Low	• The total extractive activities area is not located in a mapped protected plant trigger area. • Threatened flora and fauna were not observed within the total extractive activities area and are unlikely to occur based on the available habitat resources and ongoing disturbance by the continued quarrying operations. • The proposed expansion will not impact threatened flora or fauna.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
	Introduction or spread of weeds, pests (rodents) and vectors (mosquitoes).	Unlikely	Minor	Low	• Weeds and pests (rodents, cockroaches, etc.) shall be managed as part of routine site maintenance. • Proposed quarrying activities are not anticipated to present a significant risk with regards to the proliferation of weeds, pests (rodents) or vectors (mosquitoes).
	Harm to the ecological values and functions of waterways or wetlands.	Rare	Insignificant	Low	• The total extractive activities area does not contain or immediately adjoin any waterways or wetlands. • Stormwater at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan. • The proposed expansion will not impact the ecological values or functions of any waterways or wetlands in the Lower Mungallala and Wallam Creeks catchment.
	Adverse impacts to landscape connectivity or protected areas.	Rare	Insignificant	Low	• The site or the total extractive activities area does not include or adjoin any protected areas. • The site survey confirmed that the total extractive activities area does provide some function in landscape connectivity for small birds, reptiles, and macropods. • Disturbed areas shall be progressively rehabilitated in accordance with the SBMP to ensure landscape connectivity values are maintained where possible. • The proposed expansion will not adversely impact on landscape ecological values or connectivity.
	Adverse impacts on PEM (MSES or MNES) at the site.	Rare	Insignificant	Low	• The total extractive activities area has strategically been located a minimum distance of 50m from mapped Category C (regrowth vegetation). This is not a prescribed regional ecosystem and therefore is not PEM. • The total extractive activities area may provide suitable habitat for Echidna. The proposed expansion is not considered to have a significant impact on a special least concern (non-migratory) animal wildlife

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
					habitat (Echidna) as it will not result in the impacts outlined under Section 5.1 of the Significant Residual Impact Guideline. • No significant residual impacts to PEM (MSES or MNES) are anticipated. • Referral of the project under the EPBC Act is not warranted.
Bushfire	Bushfire impacts supporting infrastructure and endangers personnel.	Unlikely	Minor	Low	• The site office will be located within an already disturbed area (Figure 2). • The total extractive activities area is not mapped within a bushfire prone area under SPP mapping. • The site survey identified a moderate fire threat from vegetation within the total extractive activities area. • Bushfire is unlikely to present a significant risk to the proposed quarrying activities with the implementation of the management measures detailed in the SBMP.
Visual Amenity	Quarrying activities or the installation of ancillary infrastructure reduces the visual amenity of the site.	Rare	Insignificant	Low	• Due to the relatively flat terrain of the local area, the rural setting, large available separation distances, and existing woody vegetation, there are no sensitive viewpoints that will be able to see the quarrying operations or ancillary infrastructure. • The total extractive activities area will be situated in the northern portion of the southern land parcel at the site, which, due to existing vegetation, is not visible from Balonne Highway. • No changes to the existing site access off Balonne Highway are proposed. The existing site access track is consistent with that expected of the local area. • No significant impacts to visual amenity values by the proposed quarrying activities are anticipated.

Environmental Value	Potential Impact	Likelihood	Consequence	Risk	Comment
Cultural Heritage	Quarrying activities impact the cultural heritage values of the site.	Rare	Insignificant	Low	• There are no known cultural heritage values within the total extractive activities area. • All works shall be undertaken in accordance with the DATSIP's Duty of Care Guidelines. • No unauthorised excavation works (or related works) shall be undertaken outside the total extractive activities area. • Significant impacts to cultural heritage values by the proposed quarrying activities are unlikely with the implementation of the management measures outlined in the SBMP.

4 Environmental Management

4.1 Management Commitment

Tierney Crushing and Transport is committed to providing a high standard of environmental performance, protection, and conservation of the natural environment for the proposed quarrying operations at the site. This will be achieved by practicing good environmental management and the ongoing measurement, evaluation, and review of performance to ensure continual improvement.

Tierney Crushing and Transport are committed to:

- Complying with all legal and other obligations that apply to the proposed quarrying operations at the site for environmental protection.
- Providing adequate resources to implement this SBMP and the associated environmental protection and monitoring measures.
- Achieving the performance goals outlined in the Environmental Control Plans (ECPs) (Section 4.3).
- Monitoring compliance with this SBMP and seeking to continually improve environmental performance for quarrying operations at the site.

4.2 Environmental Management Responsibilities

4.2.1 General Environmental Duty

All persons at the site shall comply with their General Environmental Duty under the *Environmental Protection Act 1994* (EP Act). This means a person must not carry out any activity that causes or is likely to cause environmental harm, unless all reasonably practicable measures to prevent or minimise the harm have been taken.

4.2.2 Duty to Notify of Environmental Harm

All persons have a duty under the EP Act to notify the Department of Environment, Science and Innovation (DESI) of incidents or emergencies that cause or threaten material or serious environmental harm. This obligation is detailed further at Section 7.3.

4.2.3 Duty to Restore the Environment

All persons have a duty under the EP Act to take actions as soon as reasonably practicable to rehabilitate or restore the environment as far as reasonably practicable to its condition before the harm was caused. The duty to restore applies if a person has caused or permitted an incident involving contamination to occur that results in unlawful environmental harm.

When deciding the measures required to restore the environment, regard for the following must be had:

- The nature and extent of the environmental harm caused by the contamination.
- The sensitivity of the receiving environment to remedial measures that might be taken in relation to the environmental harm.
- The current state of technical knowledge for remedial measures that might be taken in relation to the environmental harm.
- The likelihood of successful application of the different measures that might be taken in relation to the environmental harm.
- The financial implications of the different measures that might be taken in relation to the environmental harm.

The Duty to Restore the Environment Information Sheet can be downloaded from the DESI website.

4.2.4 Roles and Responsibilities

All personnel, including sub-contractors and visitors, are responsible for environmental protection during operations and maintenance works associated with the proposed quarrying operations at the site. Responsibilities and reporting lines for environmental matters are described in Table 5.

Table 5 Roles and responsibilities

Role	Responsibilities	Reports to
Quarry Manager	• Ensure operations comply with all relevant regulatory and project requirements. • Monitor changes to legislation which may affect site operations. • Ensure this SBMP is fully implemented, and environmental protection is not secondary to operational requirements. • Provide adequate resources for implementation of the SBMP. • Ensure that all personnel understand, accept, and fully carry out their obligations for environmental protection and that they are adequately trained, instructed, and resourced to fulfil their obligations. • Undertake the annual environmental management review and SBMP review. • Seek relevant approvals for any required works or changes to site conditions outside the limits of the applicable approvals/permits/plans. • Conduct environmental incident investigations as required. • Direct that works be stopped immediately where there is an actual or potential risk of environmental harm. • Comply with General Environmental Duty, Duty to Notify of Environmental Harm and Duty to Restore the Environment.	Regulatory authorities
Other personnel (includes staff, visitors, inspectors, and contractors)	• Regard environmental protection as a central theme in their actions. • Conduct operations as per the SBMP to reduce the risk of adverse environmental impacts. • Report any defects in plant or equipment and keep the workplace in a tidy state. • Notify the Quarry Manager of any unexpected changes to site conditions. • Assist with environmental incident investigations as required. • Stop works where there is an actual or potential risk of environmental harm and notify the Quarry Manager. • Comply with General Environmental Duty, Duty to Notify of Environmental Harm and Duty to Restore the Environment.	Quarry Manager

4.3 Environmental Control Plans

Environmental control plans (ECPs) have been developed to document site-specific environmental management measures to address the key environmental management considerations for the proposed quarrying operations. Alternative controls to those outlined in the ECPs may be adopted if the objectives of the relevant ECP can still be met and should be documented in an updated SBMP. The ECPs provide management measures in relation to:

1. Air and Noise
2. Biodiversity and Biosecurity
3. Land and Water
4. Hazardous Substances
5. Liquid and Solid Wastes
6. Plant and Equipment
7. Cultural Heritage

Specific controls in relation to environmental emergency preparation and response (fire, heavy rainfall, and spill response) are provided at Section 8.

ECP 1 - Air and noise		
Guidelines and Legislative Requirements		
EP Act, EPP Air, EPP Noise, Development Approval and Environmental Authority.		
Performance Goal		
No complaints of nuisance regarding air and noise emissions from the quarrying operations at the site.		
Management Actions	**Responsibility**	**Frequency**
Air Quality		
Use water sprays to supress dust at extraction and screening areas and on haul roads.	Quarry Manager	As required to supress dust emissions based on site and weather conditions
Plant and equipment shall be inspected and maintained in accordance with manufacturer's recommendations to minimise air emissions in exhaust.	Quarry Manager	At all times
No burning of wastes or other materials shall be permitted on site.	All persons	At all times
Undertake progressive rehabilitation of the total extractive activities area to minimise fugitive dust emissions from disturbed ground.	Quarry Manager	As required
Ensure trucks, trailers and loads are secured and covered to minimise dust from loads when travelling on public roads.	Drivers	At all times when travelling offsite on public roads
Restrict vehicle speeds to 20 km/hr on site.	All persons	At all times
Blasting shall be undertaken approximately three (3) times per year in accordance with the blasting contractor's blast management plan and procedures.	Quarry Manager and Blasting Contractor	At all times
Noise		
Site operations shall be restricted to the following hours: • Office hours, drilling activities, crushing, and screening from 6:00am to 6:00pm, Monday to Friday. • Blasting operations between 9.00am and 5.00pm, Monday to Friday. • Truck movements from 5:00am to 7:00pm, Monday to Friday. • Servicing plant equipment - only as required but may occur 24 hours per day, 7 days per week.	All persons	At all times
Maintain plant and equipment in accordance with the manufacturer's requirements to minimise noise emissions.	Quarry Manager	At all times
No unnecessary revving or idling of engines on mobile and stationary machines and shut down any equipment not in use.	All persons	At all times
Ensure trucks, trailers and loads are secured to minimise rattling and other noise emissions when on public roads.	Drivers	At all times when travelling offsite on public roads
Blasting shall be undertaken approximately three (3) times per year in accordance with the blasting contractor's blast management plan and procedures.	Quarry Manager and Blasting Contractor	At all times

Monitoring		
Air quality (dust) and noise monitoring shall be monitored at sensitive receptors upon written request by the administering authority in response to a complaint of nuisance.	Quarry Manager	Upon written request by the administering authority in response to a complaint of nuisance
Corrective Actions		
Complaints and incidents in relation to air and noise emissions shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
Monitoring results shall be provided to the administering authority within 20 business days of a request to conduct nuisance-based monitoring	Quarry Manager	Within 20 business days of receipt of a written request to conduct nuisance-based monitoring

ECP 2 – Biodiversity and biosecurity		
Guidelines and Legislative Requirements		
EP Act, *Nature Conservation Act 1992*, EPBC Act 1999, *Biosecurity Act 2014*, Development Approval and Environmental Authority.		
Performance Goals		
• No unauthorised harm to native flora or fauna. • No introduction or spread of weeds or pests listed under the *Biosecurity Act 2014*.		
Management Actions	**Responsibility**	**Frequency**
Native flora and fauna		
Limit speeds to 20 km/hr on the access road at the site and signpost accordingly.	All persons	At all times
Clearly mark the approved limits of clearing/excavation at the total extractive activities area before undertaking clearing works and excavation works.	Quarry Manager	Before clearing or excavation works
Minimise and stage vegetation clearing as far as reasonably practicable.	Quarry Manager	During clearing works
No animals shall be deliberately or unlawfully killed or otherwise harmed.	All persons	At all times
Fauna observed on site shall be allowed to move on at their own accord. There shall be no touching, interfering with or feeding fauna.	All persons	At all times
Prior to clearing any trees to be removed, they shall be inspected for wildlife (i.e., koalas, possums, bird's nests, etc.). If wildlife is present, the tree must not be felled or pruned until the wildlife has left the tree on its own or has been removed by a Fauna Spotter Catcher.	Quarry Manager	During clearing works
Clearing, including felling, pushing, lopping, and grubbing of existing trees and vegetation not identified for retention must be undertaken by a Suitably Qualified Person (SQP) and must include: • No damage to other vegetation to be retained. • No burning of removed vegetation and debris.	Quarry Manager	During clearing works
No trees identified for retention shall be damaged in any way by quarrying activities. Avoidance measures (e.g., fencing, signage) shall be implemented during operations to ensure this.	Quarry Manager	At all times
Should unexpected threatened species or ecological communities be discovered within the total extractive activities area, the following procedure shall be followed: • Stop work in the immediate area of the threatened species. • Consultation with specialists to assess the significance of the find. • Consideration of potential regulatory approvals required to allow works to re-commence.	Quarry Manager	As required
If injured wildlife is found onsite, contact a veterinary clinic (St George Veterinary Practice – (07) 4625 5929).	All persons	As required
Weeds and pests (biosecurity)		
Vehicles, plant, or equipment that have or may have been used in weed infested areas shall be washed down at an approved offsite washdown facility and inspected and certified as clean by a competent and trained person prior	Quarry Manager	As required

to entry to the site (i.e., third party weed hygiene certification).		
Weed management activities shall be undertaken within the total extractive activities area as required using registered herbicides to control weeds that are listed under the *Biosecurity Act 2014*.	Quarry Manager	As required
Putrescible wastes (e.g., food wastes) shall be kept in covered bins to prevent access by vermin and removed regularly from site.	Quarry Manager	At all times
Feeding of wild animals is prohibited.	All persons	At all times
Pest animal control shall only be undertaken by personnel with appropriate permits and licences.	Quarry Manager	As required
Ensure all staff and sub-contractors are aware of fire ant carrier materials (e.g., soil, plant material (mulch, green waste, compost)) and are adequately trained in management and reporting requirements.	Quarry Manager	At all times
Ensure all plant and equipment is free of fire ant carrier materials upon arrival at the site. All plant and equipment shall be brought to the site in accordance with relevant regulatory controls for Fire Ants and any applicable movement restrictions or permits required (National Fire Ant Eradication Program (fireants.org.au)).	Quarry Manager	At all times
If fire ants are encountered or suspected at the site, they shall be reported to Biosecurity Queensland within 24 hours. Reporting details are provided on the National Fire Ant Eradication Program website (National Fire Ant Eradication Program (fireants.org.au)). The Quarry Manager shall consult with Biosecurity Queensland on relevant controls/exclusion areas to implement if Fire Ants are encountered.	All persons	At all times
Monitoring		
Monitor the total extractive activities area for weed or pest outbreaks and manage as required.	Quarry Manager	Ongoing
Use a Fauna Spotter Catcher to monitor clearing works if fauna habitat trees (including hollows, nests, animals, etc.) are present.	Quarry Manager	During clearing works if habitat trees are present
Corrective Actions		
Incidents in relation to biodiversity and biosecurity shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
If invasive plants or animals listed as prohibited or Category 1 or 2 restricted matter at Schedule 2 of the *Biosecurity Act 2014* are identified these shall be reported to Biosecurity Queensland by calling 13 25 23.	All persons	Within 24 hours of becoming aware

ECP 3 - Land and water		
Guidelines and Legislative Requirements		
EP Act, EPP Water and Wetland Biodiversity, Stormwater Management Plan, Environmental Authority and Development Approval.		
Performance Goal		
No material or significant environmental harm to soil or water quality threatened or caused by quarrying activities.		
Management Actions	**Responsibility**	**Frequency**
Soil Resources		
Topsoil and subsoil shall be stripped and stockpiled separately for later use during rehabilitation works.	Quarry Manager	At all times
Soil stockpiles shall be less than 2 m high and provided with erosion controls if they will not be used within 30 days.	Quarry Manager	As required
Use water sprays at extraction and screening areas and on haul roads.	Quarry Manager	As required
Progressively rehabilitate the total extractive activities area (refer to Section 5).	Quarry Manager	As required
Implement erosion and sediment controls in accordance with AustIECA (2008) Best Practice Erosion and Sediment Control. The fundamentals of erosion and sediment control include: • Erosion: minimise the area and duration of soil exposure. • Sediment: sediment controls to be suited to soils, climate, and catchment size. • Drainage: divert clean runoff around disturbed areas and convey drainage in a non-erosion manner.	Quarry Manager	At all times
Erosion and sediment controls shall be installed prior to the start of ground disturbing works and maintained until the disturbed area has been stabilised.	Quarry Manager	At all times
Mud or debris from wheels and bodies of vehicles and equipment shall be removed prior to entering the Balonne Highway.	Drivers	As required
Soil tracked onto sealed public roads shall be physically removed.	Quarry Manager	As required
Water Quality		
Divert clean runoff around disturbed areas.	Quarry Manager	At all times
Minimise ground cover disturbance.	Quarry Manager	At all times
Clean up spills immediately.	All persons	At all times
Water use for dust suppression shall be minimised as far as practicable.	Quarry Manager	At all times
Stormwater runoff at the site shall be managed in accordance with RMA Engineers' Stormwater Management Plan: • A detention basin shall be established shall be established in the western portion of the total extractive activities area to mitigate median peak runoff flows. Detained runoff shall be discharged to the north through a pipe outlet.	Quarry Manager	At all times

• Four (4) sediment basins shall be established across the total extractive activities area to mitigate sediment loads leaving the site. • Dirty water drains shall be established across the total extractive activities area to convey runoff internal to the total extractive activities area to the sediment basins.		
Monitoring		
Inspect access tracks, quarrying areas, stormwater infrastructure, and erosion and sediment controls to identify erosion, sediment build-up, maintenance requirements and rectify where necessary.	Quarry Manager	Monthly and prior to and after rainfall exceeding 10mm in 24 hours
If soil or water testing is required it shall be undertaken by Suitably Qualified Persons in accordance with the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013), EP Act and the Monitoring and Sampling Manual 2018.	Quarry Manager	As required
Corrective Actions		
Incidents in relation to land and water management shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
If runoff from the total extractive activities area causes or threatens serious or material environmental harm the incident shall be notified to the DESI (refer to Section 7.3).	Quarry Manager	As required

ECP 4 - Hazardous substances		
Guidelines and Legislative Requirements		
Development Approval, Environmental Authority, *AS1940-2017: The Storage and Handling of Flammable and Combustible Liquids* and Workplace Health and Safety Queensland's Managing Risks of Hazardous Chemicals in the Workplace – Code of Practice 2018.		
Performance Goal		
No environmental harm caused by the storage, use or handling of hazardous substances during the proposed quarrying operations at the site.		
Management Actions	**Responsibility**	**Frequency**
General Management Requirements		
Keep chemicals and other liquids (e.g., fuels and oils) that are in containers greater than 15 litres within a secondary containment system that is impervious to the materials stored within it and managed to prevent the release of contaminants to waters or land. Secondary containment may be fixed bunding, self-bunding pallets or double skinned containers. Bunds should be large enough to contain the volume of the largest container + 10%. This applies to static and mobile fuel tanks (e.g., fuel pod in ute or a fuel trailer shall be self-bunded).	Quarry Manager	At all times
The diesel AST shall be self-bunded and comply with the relevant requirements of Australian Standard *AS1940-2017: The Storage and Handling of Flammable and Combustible Liquids*	Quarry Manager	At all times
Clean stormwater shall be diverted away from areas that could potentially be contaminated.	Quarry Manager	At all times
Spills shall be cleaned up immediately.	All persons	At all times
Personnel shall be trained in spill prevention and spill response/control procedures.	Quarry Manager	At all times
Spill kits shall be located at strategic locations within the total extractive activities area (e.g., at the diesel AST). Ensure that spill clean-up kits are stocked and replenished appropriately, and in the correct location for use.	Quarry Manager	At all times
Any chemical spills that occur are removed using 'dry' cleaning methods (e.g., use of absorbent materials, sweeping). The use of degreasers, detergents and hosing down is prohibited. All used absorbent materials shall be managed and disposed of as regulated waste.	All persons	At all times
No onsite disposal of chemical wastes shall be permitted.	All persons	At all times
The SDS for hazardous substances shall be kept on site.	Quarry Manager	At all times
All hazardous substances shall be classified, stored, labelled, and used in accordance with the Code of Practice, SDS, manufacturer's requirements and the relevant Australian Standard.	All persons	At all times
Appropriate fire extinguishers shall be provided on site for flammable and combustible chemicals.	Quarry Manager	At all times
Aggregate Pre-Coating (if required)		
Pre-coating solution shall be stored on a bunded pallet and away from contact with rainfall and stormwater.	Quarry Manager	At all times
Pre-coat shall be applied thinly in accordance with the relevant manufacturer's specifications, so the aggregate is fully coated but there is no excess material.	Quarry Manager	At all times

A diversion bank shall be placed to direct runoff around stockpiles of pre-coated aggregate. Stockpiles that are not being accessed shall be covered with plastic sheeting to minimise contact with rainfall.	Quarry Manager	At all times
Monitoring		
Check and replenish spill kit contents.	Quarry Manager	Monthly and after a spill
Corrective Actions		
Incidents in relation to hazardous substances shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
Spills or leaks that cause or threaten serious or material environmental harm shall be notified to the DESI (refer to Section 7.3).	Quarry Manager	As required

ECP 5 – Liquid and Solid Wastes		
Guidelines and Legislative Requirements		
EP Act, *Waste Reduction and Recycling Act 2011*, Development Approval and Environmental Authority.		
Performance Goals		
• Wastes correctly segregated and stored. • No illegal waste disposal or burning of wastes. • All wastes transported by appropriately licensed waste transporters to waste facilities that are licensed to receive the wastes. • All regulated waste tracking documents retained.		
Management Actions	**Responsibility**	**Frequency**
General and recyclable waste bins shall be provided at the site office for appropriate segregation of wastes.	Quarry Manager	At all times
All wastes shall be transported offsite by appropriately licensed waste transporters for disposal or recycling at facilities licensed to receive the wastes.	Quarry Manager	At all times
Regulated wastes from onsite maintenance activities (e.g., waste oil, grease cartridges, oil filters, etc.) shall be removed by service technicians at the end of the task or day (whichever comes first) or temporarily stored at the site office within secondary containment and protected from rainfall and stormwater until removal offsite by a licensed regulated waste contractor.	Quarry Manager	At all times
Effluent/wastewater (regulated waste) from the staff amenities shall be removed for offsite disposal by a regulated waste contractor.	Quarry Manager	At all times
Green waste from vegetation clearing and screened reject material shall be retained and used in progressive rehabilitation works within the total extractive activities area.	Quarry Manager	At all times
Wastes shall not be burnt or disposed of on site.	All persons	At all times
Monitoring		
Install a level monitor in the effluent storage tank for the staff amenities to include a high-level alarm to prevent an overflow.	Quarry Manager	At all times
Corrective Actions		
Incidents in relation to waste management and disposal shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
Retain records/receipts of Regulated Waste removal from the site.	Quarry Manager	At all times and retain for at least 5 years

ECP 6 - Plant and equipment		
Guidelines and Legislative Requirements		
EP Act, Development Approval and Environmental Authority.		
Performance Goals		
• Daily pre-start checks completed for all plant and equipment. • Plant and equipment maintained in accordance with the manufacturer's recommendations.		
Management Actions	**Responsibility**	**Frequency**
Daily pre-start checks shall be completed on all plant and equipment.	Drivers and operators	Daily
Plant and equipment shall be maintained in accordance with the manufacturer's recommendations.	Quarry Manager	At all times
Maintenance and major service/repair works to plant and/or equipment shall be undertaken at an offsite workshop. On-site repairs shall only occur if the works are minor maintenance, or the plant or equipment cannot be moved under its own power.	Drivers, operators, and service technicians	At all times
Spill kits, drip trays and any other necessary controls shall be used during maintenance works or repairs to plant and equipment at the site.	Drivers, operators, and service technicians	As required
Refuelling plant and equipment shall be in accordance with the following: • Refuelling activities are to be supervised at all times. • A spill kit shall be available at the refuelling point or on the refuelling vehicle. • Funnels, extended nozzles, or quick release nozzles shall be used to minimise spillage when refuelling equipment. • Refuelling shall not occur within 30 m of a watercourse or drain.	All persons	During refuelling
Monitoring		
Daily pre-start checks to monitor plant and equipment condition.	Drivers and operators	Daily
Monitor equipment operating hours/mileage to ensure plant and equipment are serviced at the required intervals.	Drivers, operators, and Quarry Manager	Ongoing
Corrective Actions		
Incidents in relation to plant and equipment shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
Daily pre-start forms shall be kept with the plant and equipment.	Drivers and operators	At all times
Service records shall be retained and made available upon request.	Quarry Manager	At all times and retain for at least 5 years

ECP 7 - Cultural heritage		
Guidelines and Legislative Requirements		
Aboriginal Cultural Heritage Act 2003, *Queensland Heritage Act 1992*, DATSIP's Cultural Heritage Duty of Care Guidelines and DATSIP's Guideline for the Discovery, Handling and Management of Human Remains.		
Performance Goal		
No adverse impacts to areas or items of potential cultural heritage value (includes indigenous cultural heritage and non-indigenous heritage matters).		
Management Actions	**Responsibility**	**Frequency**
Undertake all works with a cultural heritage duty of care.	All persons	At all times
No unauthorised quarrying works (or related works) shall be undertaken outside of the total extractive activities area. Clearly mark the approved limits of excavation at the total extractive activities area before undertaking any excavation works.	All persons	At all times
If any items (e.g., scarred trees, stone tools, art, hearths/fireplaces, or other artefacts) that are suspected of being of cultural heritage value are found: • Immediately cease all works within 30 m of the find, secure the area of the find with temporary barricading/fencing and contact DATSIP on 13 74 68. • Do not recommence works until instructed by DATSIP.	Quarry Manager	Immediately in response to a find
If human remains are found, immediately cease all works on site and contact Queensland Police in Bollon on (07) 4625 6200 (only open standard business hours) or call triple zero (000).	Quarry Manager	Immediately in response to a find
Monitoring		
An inspection of the total extractive activities area shall by undertaken by the relevant traditional owner group where works may be classified as Category 5 under the Duty of Care Guidelines.	Quarry Manager	As required
Corrective Actions		
Incidents in relation to cultural heritage shall be investigated by the Quarry Manager to identify necessary corrective actions for implementation.		
Reporting		
If any items that are suspected of being of cultural heritage value or human remains are found, the find shall be reported in accordance with the above management actions.	Quarry Manager	Immediately in response to a find

5 Rehabilitation Plan

Where disturbed land at the site will not be subject to any further disturbance by extraction or screening operations, it shall be progressively rehabilitated during the operational life of the quarry. Rehabilitation shall be planned and executed to ensure that:

- Any infrastructure that is not required by the landholder is removed (including disconnecting services). Infrastructure that is required by the landholder is left in a safe and stable condition.
- All liquid and solid wastes are removed from the area undergoing rehabilitation.
- Suitable vegetation for the location and any proposed future land use is established and sustained for exposed earthen surfaces to minimise erosion.
- The quality of soil and water, including seepage, released from the quarrying operations at the site does not threaten or cause environmental harm.
- The potential for environmental nuisance caused by dust is minimised.
- The final landform design is stable, consistent with the proposed end use of the rehabilitated land, and protects the safety of humans, stock, and wildlife.

6 Complaint Management

The Quarry Manager shall maintain and update the Complaint Log (Appendix A) for all complaints received. The following details must be recorded for all complaints received:

- Time, date, name and contact details of the complainant.
- Reason for the complaint.
- Any investigations undertaken.
- Conclusions formed.
- Any actions taken.
- Feedback to the complainant.
- Further follow-up action as required.

The following procedure shall be used to manage all complaints received about the quarry (Figure 5).

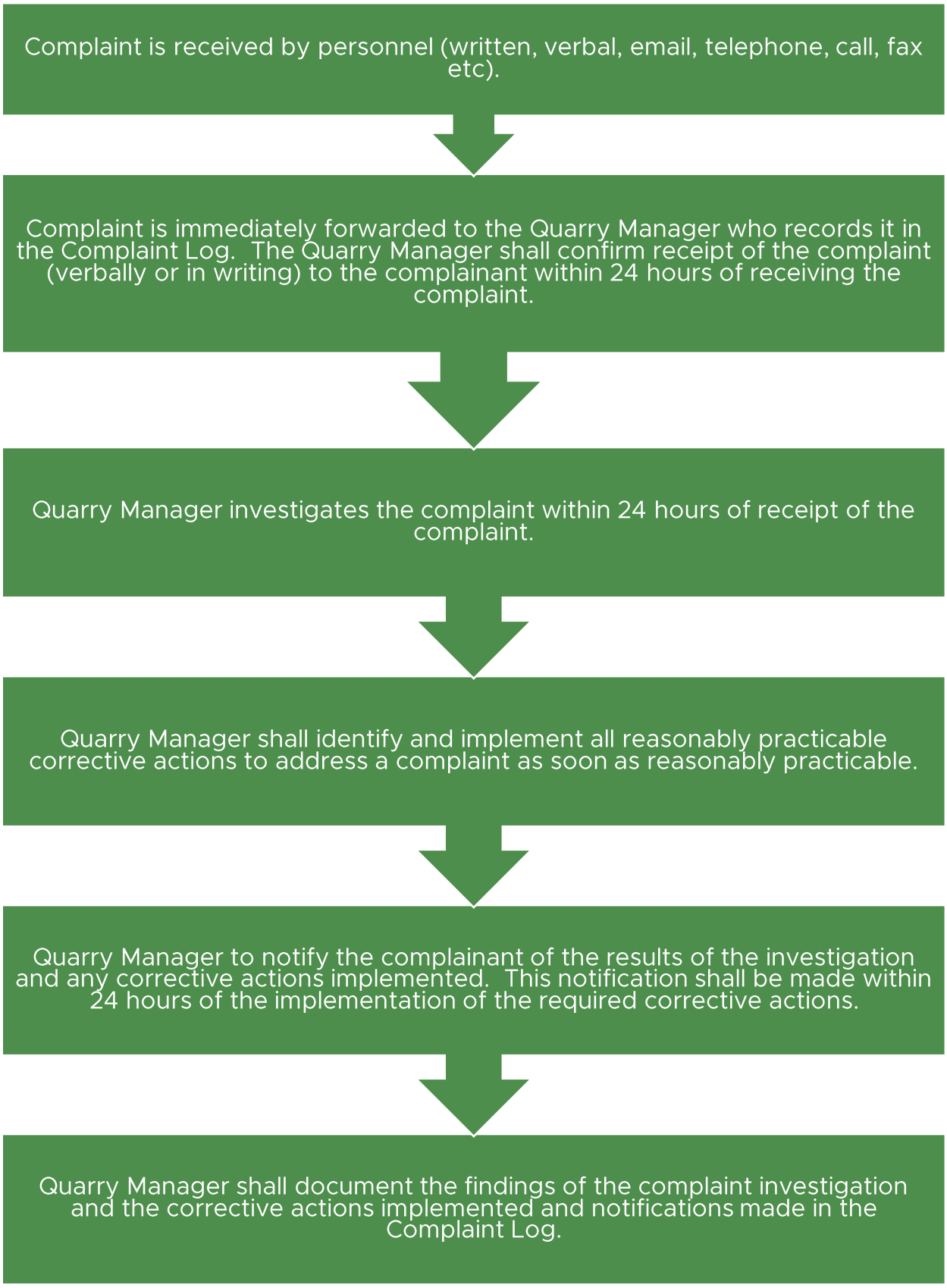


Figure 5 Complaint Management Procedure

7 Environmental Hazards, Incidents & Emergencies

7.1 Categories of Environmental Harm

There are three (3) categories of environmental harm for environmental incidents and emergencies under the EP Act (Table 6).

Table 6 Categories of environmental harm

Category	Definition	Internal reporting required?	External reporting required?
Nuisance	An unreasonable interference or likely interference with an environmental value caused by: • Aerosols, fumes, light, noise, odour, particles or smoke; or • An unhealthy, offensive or unsightly condition because of contamination; or • Another way prescribed by regulation.	Yes	Yes, but only if a breach of an EA condition (refer to Section 12.1)
Material	Environmental harm that: • Is not trivial or negligible in nature, extent or context; or • Causes actual or potential loss or damage to property of an amount of, or amounts totalling, $10K-$100K; or • Results in costs of $10K-$100K for actions to prevent or minimise the harm and rehabilitate or restore the environment to its condition before the harm. • Note - Matters which are characterised as environmental nuisance (e.g., odour, noise etc.) may constitute environmental harm that is material.	Yes	Yes
Serious	Environmental harm that: • Is irreversible, or a high impact or widespread; or • Causes harm to an area of high conservation value or special significance; or • Causes actual or potential loss or damage to property of an amount of, or amounts totalling more than $100K; or • Results in costs of more than $100K for actions to prevent or minimise the harm and rehabilitate or restore the environment to its condition before the harm. • Note - Matters which are characterised as environmental nuisance (e.g., odour, noise etc.) may constitute environmental harm that is serious.	Yes	Yes

7.2 Environmental Hazards, Incidents & Emergency Management

7.2.1 Hazard and Incident Reporting

All environmental hazards, incidents and emergencies must be reported to the Quarry Manager as soon as possible but no longer than 24 hours after becoming aware of the matter.

All hazards, incidents and emergencies shall be investigated by the Quarry Manager and any other relevant personnel to identify root causes and the appropriate course of action taken to prevent a recurrence. Corrective actions are to be evaluated on the basis of the hierarchy of controls with the aim of elimination of the impacts identified. This SBMP may require review or amendment following identification of a hazard, incident, or emergency.

If a hazard, incident, or emergency causes or threatens material or serious environmental harm, refer to Section 7.3 for external reporting requirements.

7.2.2 Incident Management & Investigation

All incidents shall be investigated by the Quarry Manager to determine:

- Nature, type, location and extent of the incident and the affected area.
- Actual and/or potential environmental impacts of the incident.
- Suspected cause/s of the incident.
- Measures required to stop any further environmental harm.
- Remedial measures required to correct any environmental harm.
- Management measures to be implemented to prevent a recurrence of the incident.
- Incident reporting requirements for regulatory authorities (refer to Section 7.3).

The requirements for the environmental assessment of impacts of an incident shall be determined by the Quarry Manager who may seek advice from an environmental consultant. If an incident involves serious or material environmental harm or a breach of an Environmental Authority condition, the regulatory authority may also advise/direct the environmental assessment.

The assessment may include environmental monitoring of a contaminant release. Based on the nature and type of the incident, the Quarry Manager, in consultation with their environmental consultant, shall determine:

- Sampling and analytical requirements.
- Applicable guidelines or thresholds to apply to data for assessing compliance and level of impact.

7.3 External Reporting of Material or Serious Environmental Harm

All persons who become aware, or ought reasonably to have become aware, have a duty to notify the DESI of incidents or emergencies that cause or threaten material or serious environmental harm. Environmental incidents or emergencies that cause or threaten material or serious environmental harm shall be reported to the DESI in accordance with Table 7.

Table 7 External reporting of material or serious environmental harm

By	To	Within	Method
Employees, sub-contractors, or visitors	Quarry Manager.	24 hours of becoming aware of the matter.	Verbal or written.
	If the Quarry Manager (or their delegate) cannot be contacted, notification must be made directly to the DESI.		Verbal initially followed by written.
Quarry Manager	DESI	24 hours of becoming aware of the matter. This 24-hour period starts as soon as the Quarry Manager is first notified.	Verbal initially followed by written.

The Duty to Notify of Environmental Harm Guideline and the standard written notification form can be downloaded from the DESI website. Contact details for the DESI are provided in Table 8.

Table 8 DESI contact details

Method of contact	Details
Pollution Hotline	1300 130 372
Fax	(07) 3330 5875
Email	pollutionhotline@des.qld.gov.au
Web	https://www.des.qld.gov.au/
Registered Post	Permit and Licence Management Department of Environment, Science and Innovation GPO Box 2454 Brisbane 4001

8 Emergency Preparation and Response

This section provides an overview of response requirements for environmental emergencies that could reasonably be expected to occur at the site during operations. Incident reports and investigations are to be completed for any emergency at the total extractive activities area.

8.1 Fire

A fire has the potential to threaten the safety or health of people, cause environmental harm and damage infrastructure and equipment. The risk of fire at the total extractive activities area shall be reduced by:

- Provision and maintenance of firefighting equipment, such as fire extinguishers, at strategic locations at the total extractive activities area.
- Monitor weather and bushfire warnings in the media.
- Maintain plant and equipment in accordance with manufacturer's specifications to minimise risk of presenting an ignition source.
- Maintain any bushfire controls at the site (e.g., firebreaks and tracks).
- Training site personnel in emergency response to fire and the use of fire safety equipment.
- Compliance with *AS1940-2017: The storage and handling of flammable and combustible liquids.*
- Regular housekeeping at the site to remove wastes.

8.2 Heavy Rain

The total extractive activities area is not in a flood hazard area; however, the site is mapped within a Level 1 Queensland floodplain flood hazard area under the Balonne Shire Planning Scheme 2019 and SPP mapping. Therefore, the total extractive activities area may be subject to heavy rainfall or localised flooding near overland flow paths. To prevent the potential contamination of stormwater and impacts on the downstream receiving environment, the following strategies shall be employed:

- Keep the site in a clean and tidy state at all times.
- If heavy rainfall and/or flooding is forecast, prepare the site by ensuring that all plant/equipment, materials and wastes are stored securely and minimise their contact with rainfall and stormwater where possible.
- Ensure all leaks and spills have been cleaned up and the source of the leak/spill rectified.
- Inspect stormwater controls prior to and after the event to ensure stormwater controls are maintained and functional with the required available capacity.

8.3 Spill Response

A chemical spill has the potential to threaten the safety or health of people, create a fire hazard or cause environmental harm. Where a chemical spill occurs, consult the Safety Data Sheet (SDS) for spill clean-up procedures and any necessary Personal Protective Equipment (PPE).

Spill response kits shall be kept at strategic locations within the total extractive activities area. Equipment contained in spill response kits shall be replenished upon use, equal to the specified list contained with the kit. The Quarry Manager shall ensure that spill response kits are inspected monthly or after a spill, and any missing items are replaced.

A spill response flow chart is provided at Figure 6. If a spill cannot be safely contained and controlled with onsite resources, the matter shall be referred immediately to emergency services by calling triple zero (000).

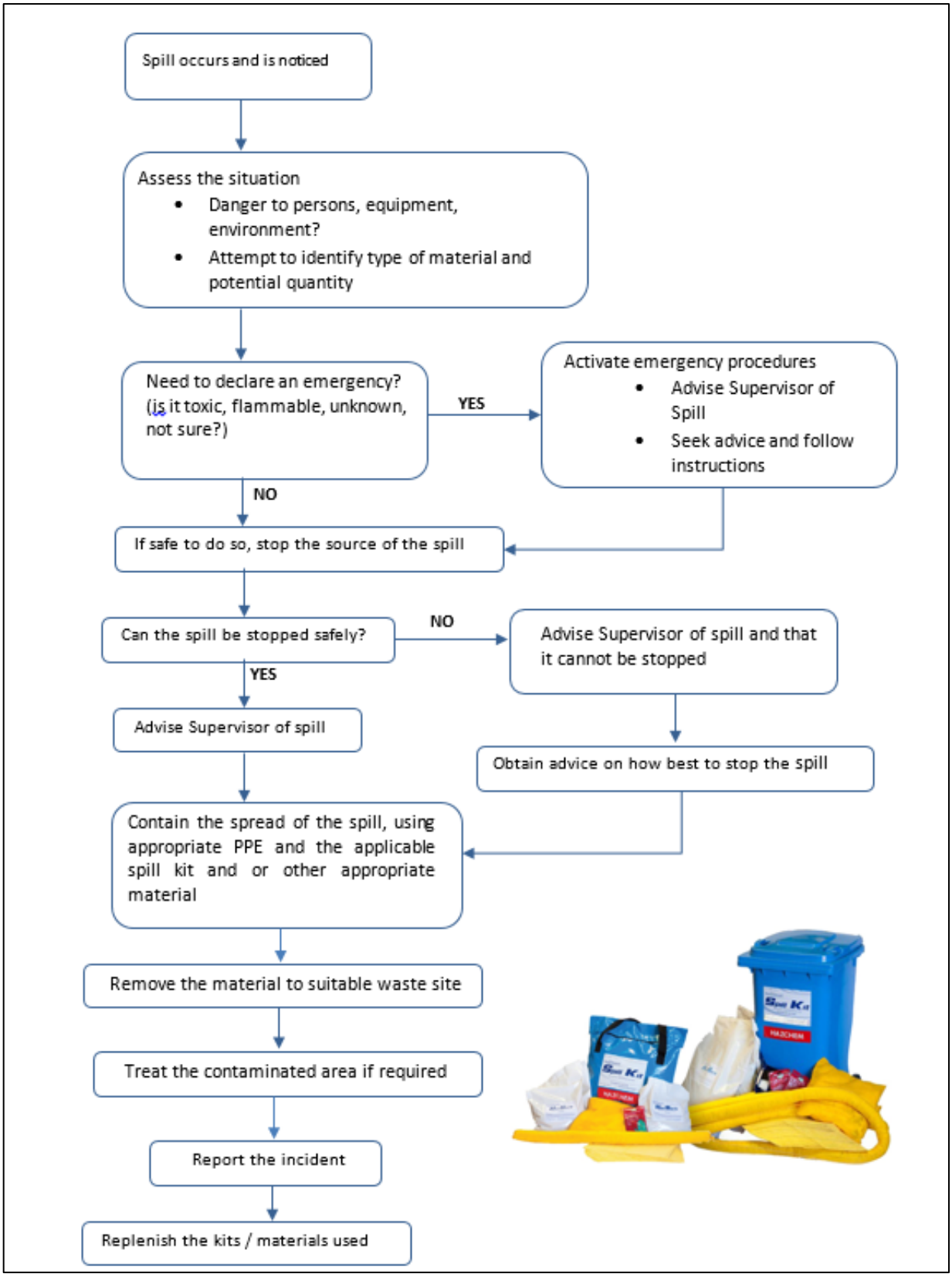


Figure 6 Spill Response Procedure

9 Inspections & Monitoring

9.1 Site Inspections

The Quarry Manager shall undertake monthly environmental site inspections of operations and work practices to:

- Ensure activities are being undertaken in accordance with approved procedures.
- Confirm that appropriate controls have been identified and are in place to minimise the risk of environmental harm.
- Identify any maintenance or workplace practice issues that need to be addressed.
- Identify potential environmental hazards that need to be addressed.

The monthly inspection checklist is provided at Appendix B.

9.2 Environmental Monitoring

Environmental impacts of routine and non-routine operations, incidents and emergencies shall be assessed. Where environmental monitoring is required, it shall be completed by suitably qualified and experienced persons in accordance with legislative standards and guidelines.

All equipment used for environmental monitoring shall be fit for purpose and maintained, operated, and calibrated in accordance with the manufacturer's specifications. Where analysis of samples is required, samples shall be submitted to a National Association of Testing Authorities (NATA) accredited laboratory.

Environmental monitoring records shall be retained and managed in accordance with Section 11.

10 Training and Communication

10.1 Environmental Awareness Training

10.1.1 Inductions

A site induction shall be given to all personnel (staff, contractors, and visitors) upon commencing work at the site and annually thereafter. This is to ensure they are aware of their responsibilities and are competent to carry out works at the site. This shall include environmental awareness training which addresses the following:

- General Environmental Duty.
- Duty to Notify of Environmental Harm.
- Duty to Restore the Environment.
- Requirements of the SBMP.
- Environmental complaint, hazard and incident management and reporting.
- Emergency response.

Training records are to be maintained and kept on site in accordance with Section 11.

10.1.2 Ongoing Training

Ongoing staff training shall be undertaken as new activities are ready to start, new environmental risks are identified, or new processes are developed. This will usually be incorporated into a regular toolbox meeting and/or risk assessments prior to undertaking the job. Records of the special training sessions will be in a similar format to toolbox meeting minutes.

10.2 Internal Communication of Environmental Information

The Quarry Manager shall communicate information regarding environmental matters to site personnel on an as-required basis. The method of communication shall be determined by the Quarry Manager.

Protocols for internal reporting of environmental hazards, incidents and emergencies are outlined at Section 7.

10.3 Communication with Regulatory Authorities

There is no requirement for routine communication with regulatory authorities regarding environmental matters. Examples of where communication with regulatory authorities may be required include, but may not be limited to, the following:

- Environmental hazards, incidents and emergencies that cause or threaten material or serious environmental harm shall be reported to regulatory authorities in accordance with Section 7.
- Notifiable Activities (as per Schedule 3 of the EP Act) undertaken at the site shall be notified by the Quarry Manager to the DESI within 20 business days of becoming aware of the activity.
- Biosecurity matters shall be reported in accordance with ECP 2: Biodiversity and Biosecurity (Section 4.3).
- A breach of an EA condition shall be reported to the DESI within 24 hours (refer to Section 12.1).
- Unexpected finds of human remains or cultural heritage items shall be reported in accordance with ECP 7: Cultural Heritage (Section 4.3).

11 Records Management

The Quarry Manager shall be responsible for managing environmental records for the site in accordance with legislative requirements, and project specific approvals and permits.

All environmental and site maintenance records shall be made available upon request by regulatory authorities. All environmental and site maintenance records shall be retained for no less than 5 years.

Examples of records may include, but not be limited to, the following:

- Site observations and site diary entries.
- Complaints.
- Incidents, incident investigations and associated restoration works.
- Results of any environmental monitoring.
- Correspondence with regulatory authorities or any other party.
- Regulated waste disposal.
- Environmental management performance reviews.
- SBMP updates.
- Site emergencies.
- Training.

12 Review and Improvement

12.1 Non-conformance & Corrective Actions

A non-conformance is defined as failure to comply with the requirements of this SBMP, regulatory requirements, and conditions of approvals and permits. Non-conformances may be identified through monitoring, inspections, or incident investigations.

Non-conforming activities shall be stopped by any person at the site in consultation with the Quarry Manager. The activity shall not recommence until an appropriate corrective action has been implemented. A corrective action must be identified and implemented for each identified non-conformance.

Any breach of the conditions of the Environmental Authority must be reported by the Quarry Manager to the administering authority within 24 hours of becoming aware of the breach. Records of the breach must be kept and include details of the breach, notifications made to the administering authority and corrective actions taken.

12.2 Environmental Management Performance Reviews

Environmental management performance reviews shall be undertaken annually as part of the continual improvement process. Reviews may also occur in addition to the annual reviews in response to matters that affect environmental management (e.g., incidents, emergencies, changes in site conditions and operations, permit conditions or legislation changes, etc.).

The annual environmental management review shall be undertaken by the Quarry Manager and other key staff. The review shall consider:

- Monitoring and inspection results for the past year.
- Recent and relevant incidents and any lessons learnt.
- Management of complaints.
- Feedback from regulatory authorities.
- Tabling of any new legal or other obligations.
- The effectiveness of environmental controls.
- Adequacy of resources for environmental management.

Findings, actions, timeframes, and the responsible parties shall be recorded in accordance with Section 11.

12.3 SBMP Review and Update

The SBMP shall be reviewed at least annually by the Quarry Manager to determine if the management measures are appropriate for operations and site conditions. If the SBMP is not appropriate for the operations and site conditions at the time of the review it shall be updated accordingly. Other triggers for review and update of the SBMP outside of the annual review cycle may include, but not be limited to:

- Following the issue of project approvals and permits.
- After an incident that causes environmental harm.
- Changes to the risk profile of the operation.
- Changes to the phase of the operation (e.g., commencement of progressive rehabilitation works).
- Changes to relevant legislation or project approvals.
- Changes to operational methods or site conditions that require additional or alternative environmental controls to manage risk to environmental values.

Appendices

Appendix A Complaint Log

Date & Time Received	Date, Time & Method of Acknowledgment	Complaint Name & Contact Details	Nature of Complaint	Investigation Findings	Corrective Actions Identified	Date Corrective Actions Implemented	Date of Complaint Close-out Notice

Appendix B Monthly Inspection Checklist

Items Inspected	Management Actions Required? (Yes/No)
General Requirements	
Is plant and equipment (including stormwater infrastructure) maintained in accordance with manufacturer's recommendations?	
Are daily pre-start checks being completed on all plant and equipment?	
Are all staff aware of fire ant carrier materials and adequately trained in management and reporting requirements?	
Are all staff trained in spill prevention and spill response/control procedures?	
Has any quarrying works (or related works) been undertaken outside of the total extractive activities area?	
Air Quality	
Are water sprays being used as appropriate to supress dust at extraction and screening areas and on haul roads?	
Noise	
Is the site operating within the approved operating hours?	
Soil Resources	
Are soil stockpiles less than 2 m high and provided with erosion controls (if not used within 30 days)?	
Has any soil tracked onto Balonne Highway been removed?	
Dangerous Goods	
Have all spills been cleaned up?	
Are there spill kits located at appropriate locations on site and have these been stocked and replenished appropriately?	
Waste	
Are regulated wastes (e.g., waste oil, grease cartridges, oil filters, etc.) stored in appropriate secondary containment proximate to the site office and protected from rainfall and stormwater?	
Has green waste from vegetation clearing and screened reject material been retained as appropriate for rehabilitation works?	

range
environmental
consultants

www.rangeenviro.com.au

BRISBANE
Unit 1/7 Birubi Street
Coorparoo Qld 4151

TOOWOOMBA
Office A, 189 Hume St
Toowoomba QLD 4350

T 07 4588 6711
E admin@rangeenviro.com.au

APPENDIX G – STORMWATER MANAGEMENT PLAN

RMA Engineers

Quarry - Rockville Quarry | Bollon

Stormwater Management Plan

Date 14 February 2024

Project Number 23E-0152

REPORT CONTROL SHEET

RMA ref. no:	23E-0152
Project name:	Rockville Quarry | Quarry
Report title:	Stormwater Management Plan
Report author:	Michael Silva

Document control						
Revision	Author	Reviewer	Approved for issue			
			Name	RPEQ no.	Signature	Date
0	Michael Silva	Joshua Goodall	Joshua Goodall	18370		14/02/2024

Disclaimer:

This report is a professional opinion based on the information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects.
This report will comment on the Civil infrastructure to the project and may outline probable costs but the extent of the commission of RMA does not extend to detailed cost feasibility, as such the costs should not be relied on for financing arrangements.
The conclusions in this report should not be read in isolation. We recommend that its contents be reviewed in person with the author so that the assumptions and available information can be discussed in detail to enable the reader to make their own risk assessment in conjunction with information from other sources.

Table of Contents

1. Introduction

1.1 General

RMA Engineers Pty Ltd has been commissioned by Tierney Crushing & Transport Pty Ltd (the client) to prepare a Stormwater Management Plan to support a development application for the proposed use of a quarry (gravel pit) for extraction of hard rock. The site is formally identified as Lot 3 on MGL20 within the Balonne Shire Council (BSC) area. The quarry is situated approximately 23km and 136km west of the Bollon and St George townships, respectively.

For stormwater quantity, the report will calculate pre- and post-developed stormwater discharge rates, including:

- calculation of pre-development median peak discharge rates for all standard Annual Exceedance Probabilities (AEP's) up to and including 1% at the nominated assessment location
- calculation of post-development median peak discharge rates for all standard AEP's up to and including 1% at the nominated assessment location

For stormwater quality, the report will:

- Identify the location of stormwater discharge for the site
- Calculate the sediment basin sizing for the 24 hour 1 in 5 year storm event

1.2 Basis of report

This report has been compiled based on:

- Discussions between RMA Engineers Pty Ltd and the Client
- Survey and LiDAR data supplied by DSQ Land Surveyors – Received 15 January 2024
- Australian Rainfall & Runoff (ARR), 2016 – Accessed 15 November 2023
- Bureau of Meteorology – Design Rainfall Data System (2016) – Accessed 15 November 2023
- Queensland Urban Drainage Manual (QUDM), Volume 1, Fourth Edition 2016

This report has been prepared specifically for the aforementioned client, site, and project. It has been written solely for the purpose of providing engineering advice on the above issues for the Council and the Client for this development site. Please note that this report has been compiled based on the information that is current at the time of report printing, and that the recommendations supplied within this report are based solely on the above.

Any existing drainage issues upstream or downstream from the analysed area remain the responsibility of the Council to investigate and maintain.

2. Pre-development site characteristics

2.1 Location and description

The proposed quarry is located approximately 23km west of Bollon, approximately midway between Cunnamulla and St George along the Balonne Highway. The site is formally identified as Lot 3 on MGL20 within the Balonne Shire Council (BSC) area. This parcel of land is bisected by the Balonne Highway. The subject quarry site itself is located on the southern side of the Balonne Highway. No extractive works are proposed on the section of land located north of the Balonne Highway.

The subject quarry site itself and the immediate surroundings are classified as being of rural land uses as per the BSC Planning Scheme.

The site (highlighted in blue) and its environs are illustrated on the locality plan the figure below.

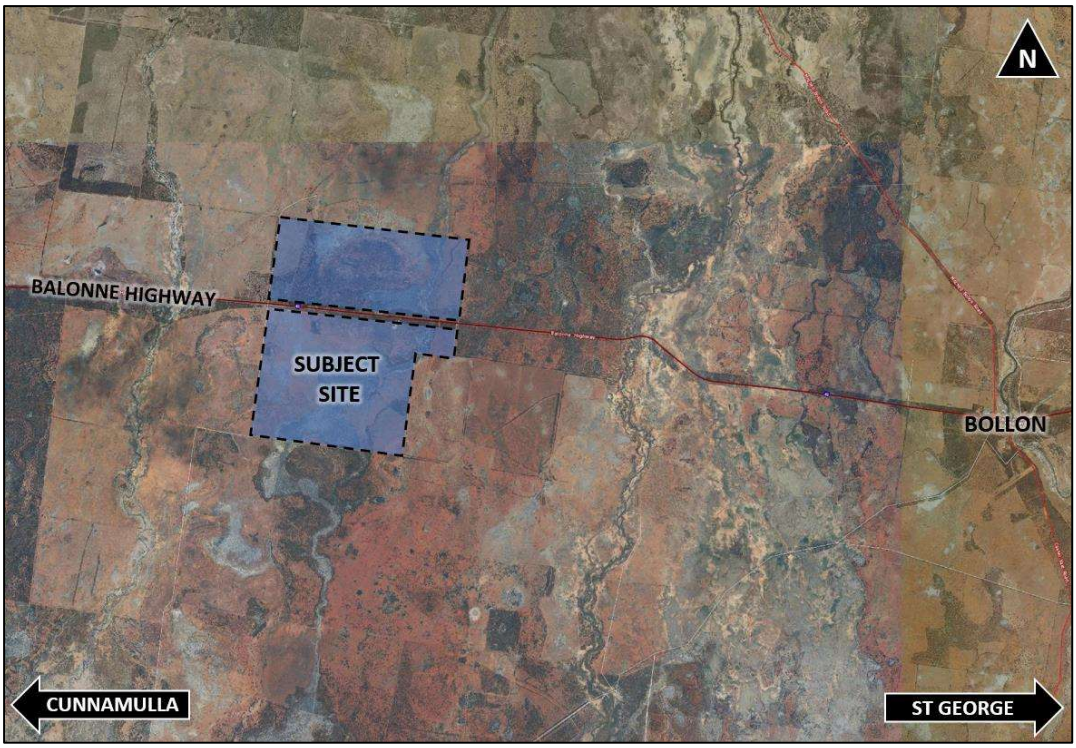


Figure 2-1: Locality plan (Google Earth)

The total site extents of Lot 3 on MGL20 (highlighted above in blue) comprises an area of approximately 5,400 ha.

The proposed quarry works are located within the southern portion of the lot, adjacent to the Balonne Highway. The total proposed extractive works area is approximately 81 ha. The extractive works area is covered with grass and scattered trees.

The site layout is illustrated in detail at **Appendix A**.

2.2 Topography and existing drainage

The figure below illustrates the existing topography and assessment locations.

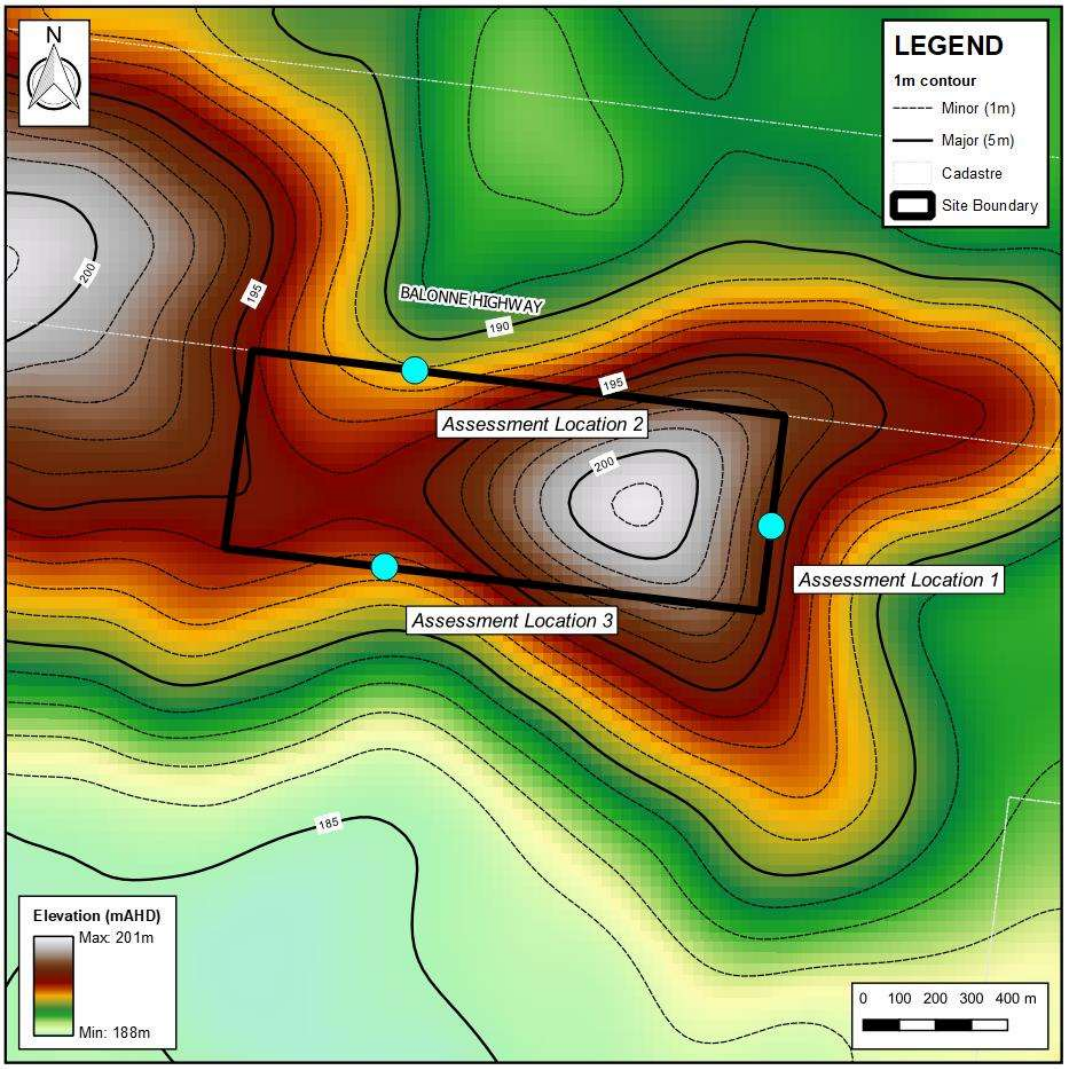


Figure 2-2: Assessment location

The existing site has the following three discharge locations:

- Assessment Location 1 – east towards adjacent lot existing floodplain and highly vegetated area
- Assessment Location 2 – north towards Balonne Highway road reserve. It is noted that there is an existing culvert underneath the Balonne Highway located outside the site's frontage.
- Assessment Location 3 – south towards existing floodplain and highly vegetated area.

3. Proposed development

3.1 Extent of Land Subject to this Application

The proposal seeks a development application for the quarry operations.

The extent of the quarry is detailed in **Figure 3-1**.

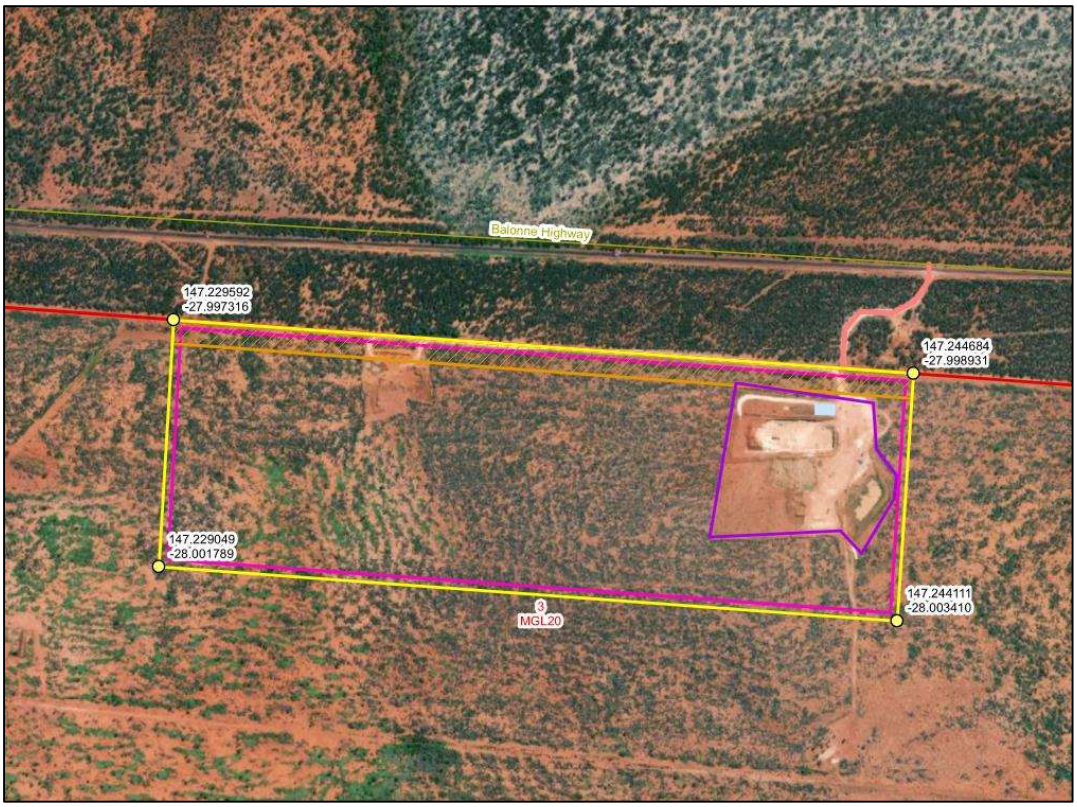


Figure 3-1: Extent of extractive extents subject to the proposal (yellow area)

Figure 3-2: Figure 3-1 Legend

4. Stormwater quantity management

4.1 General

The overall stormwater management strategy is as follows:

- Calculate the flows at the assessment location in the pre- and post-developed scenarios and show that the ultimate quarry does not result in an actionable nuisance.

Analysis has been based on comparing pre-development median peak flow rates to post-development median peak flow rates at the assessment locations outlined in **Section 2.2**.

Refer to **Appendix C** for pre-development and post-development stormwater catchment plans.

4.2 Stormwater quantity assessment

The QUDM lawful point of discharge test was used to assess the potential impact of the development on each discharge location.

The following figure shows the lawful point of discharge criteria as per QUDM 2016.

The criteria for determining the lawful point of discharge are:

(i) Will the proposed development alter the site's stormwater discharge characteristics in a manner that may substantially damage a third party property[ii] (see Section 3.6)?

- If not, then no further steps are required to obtain tenure for a lawful point of discharge (assuming any previous circumstances and changes were lawful).
- If there is a reasonable risk of such damage, then consider issue (ii) or (iii).

(ii) Is the location of the discharge from the development site under the lawful control of the local government or other statutory authority from whom permission to discharge has been received? This will include a park, watercourse, drainage or road reserve, stormwater registered drainage easement, or land held by local government (including freehold land).

Note: The regulatory authority (in its capacity as land holder) is likely to require information about the potential impact of the site's stormwater discharge characteristics on third party properties (particularly those downstream of the proposed discharge point) before it will consent to the discharge entering its land.

- If so, then no further steps are required to obtain tenure for a lawful point of discharge.
- If not, then consider issue (iii). A land owner or regulator may require that the developer obtain an authority to discharge as described in (iii) in order for the stormwater to ultimately flow to a location described in (ii).

(iii) An authority to discharge over affected properties will be necessary. In descending order of certainty, an authority may be in the form of:

- Dedication of a drainage reserve or park
- A registered easement for stormwater discharge/works
- Written discharge approval

Figure 4-1: Lawful point of discharge test (QUDM 2016)

The ultimate quarry extent will generally result in reduced flows discharging to the assessment locations. As the quarrying proceeds, the sump will contain the runoff from the quarry pit and reduce the quantity of flow discharging from the site. Therefore, the development will not alter the discharge characteristics in a manner that may substantially damage a third party's property, the criteria for meeting the lawful point of discharge is met.

Internal to the quarry pit, runoff is conveyed to a sump. Runoff contained in the sump is re-used internally to the quarry. The sump size, location and maintenance are incorporated into the operational management of the quarry. Therefore, the criteria for meeting the lawful point of discharge is met.

4.3 Hydrological modelling

4.3.1 General

A hydrological analysis has been undertaken using DRAINS. DRAINS is a modelling software package developed for the design and analysis of urban stormwater drainage systems. It utilises either the "Extended Rational Method" or the "Initial Loss / Continuing Loss" hydrology loss models to convert Australian Rainfall and Runoff temporal patterns and design rainfall data into runoff hydrographs.

The hydrological model used for this analysis is the Initial Loss / Continuing Loss model.

Rainfall is modelled for the catchment in equal time intervals under each storm event and the subsequent runoff is routed through a drainage system.

4.3.2 BOM and ARR Datahub info

The average centroid of the contributing catchment's latitude and longitude were used as inputs to the Bureau of Meteorology and AR&R datahub websites to extract the relevant rainfall parameters adopted within the hydrological models. This data is summarised in **Appendix B**.

4.3.3 Initial loss and continuing loss

Key hydrological parameters adopted within the model are identified within **Table 4-1.**

Table 4-1: Hydrological parameters

Adopted Parameters	
Pervious Area Initial Loss (mm)	22
Pervious Area Continuing Loss (mm/hr)	2
Impervious Area Initial Loss (mm)	0
Impervious Area Continuing Loss (mm/hr)	0
Temporal Pattern Zone	Rangelands

4.3.4 Temporal Patterns

ARR 2016 temporal patterns have been adopted for the analysis.

The temporal patterns adopted within the hydrologic analysis were taken from Chapter 5 of Book 2 of ARR 2019 (extracted from ARR datahub)

The site is located in the Rangelands region.

4.3.1 Scenarios

This assessment has modelled the following scenarios:

- Worst Case Scenario (no quarry pit has been excavated and the extraction area has been stripped)
- Design Scenario (60% of extractive area has been excavated)

The design scenario provides a realistic outcome for the operational use of the site whereas the worst-case scenario reflects the initial phase of quarry excavation when only the topsoil and vegetation is stripped (i.e. high impervious factor across the whole catchment).

4.4 Catchments

4.4.1 Pre-development catchment and modelling details

Fraction impervious values have been selected based on the existing site and in accordance with Table 4.5.1 of QUDM 2016.

Times of concentration have been calculated using the methodologies outlined in Section 4.6 of QUDM 2016.

The table below summarises the pre-development catchment parameters used within the DRAINS model.

Table 4-2: Pre-development catchment details

Catchment ID	Time of Concentration (minutes)	Catchment Area (ha)	Percent Impervious (%)
E1	25	13.44	0
E2	24	26.19	0
E3	24	35.01	0
E4	34	11.42	0
E5	22	3.43	0

Refer to **Appendix C** for the pre-development catchment plan.

The DRAINS model schematic for the pre-developed scenario is presented in the figure below.

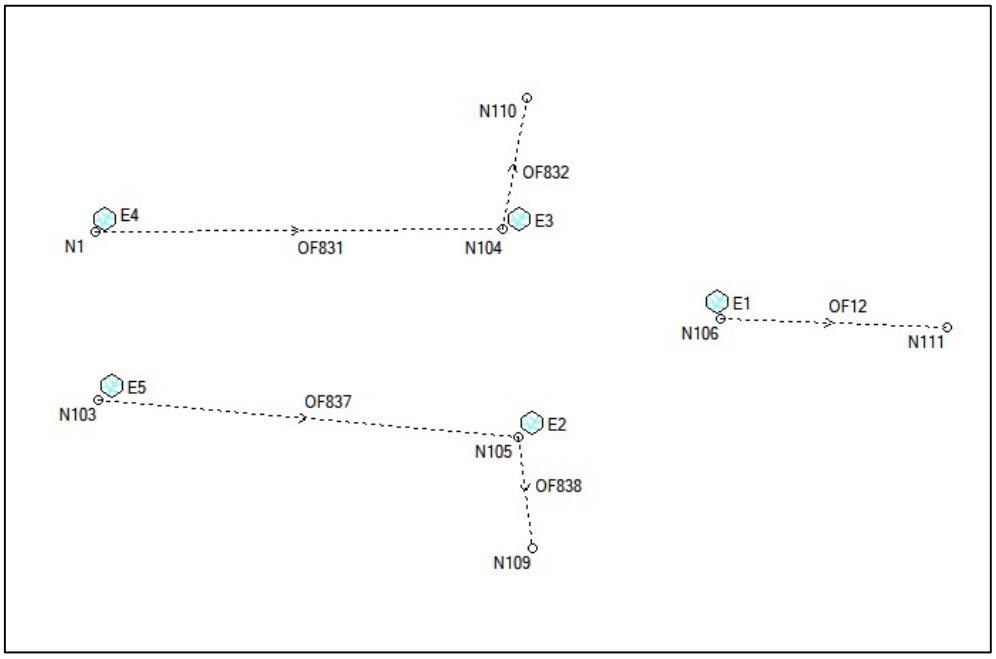


Figure 4-2: Pre-developed DRAINS model schematic

4.4.2 Post-development catchments

Fraction impervious values have been selected based on the proposed nature of the development and in accordance with Table 5.4.1 of QUDM 2016.

Times of concentration have been calculated using the methodologies outlined in Section 4.6 of QUDM 2016.

A post-development catchment plan is provided in **Appendix C**.

The following table outlines the post-development catchment characteristics adopted in DRAINS.

Table 4-3: Post-development catchment details

Catchment ID	Time of Concentration (minutes)	Catchment Area (ha)		Percent Impervious (%)
		Worst Case Scenario	Design Scenario	
D1	25	12.32	4.93	70
D2A	5	5.97	2.39	70
D2B	22	6.32	2.55	70
D2C	5	4.42	1.77	70
D3	22	13.97	5.59	70
D4	34	13.92	13.92	0
D5	22	3.43	3.43	0
D6	22	11.49	11.49	0
D7	22	9.61	9.61	0
D8	24	17.69	17.69	0

For quantity mitigation, a detention basin has been included for the post-development catchment D3.

The DRAINS model schematic for the post-developed scenario is presented in the following figure.

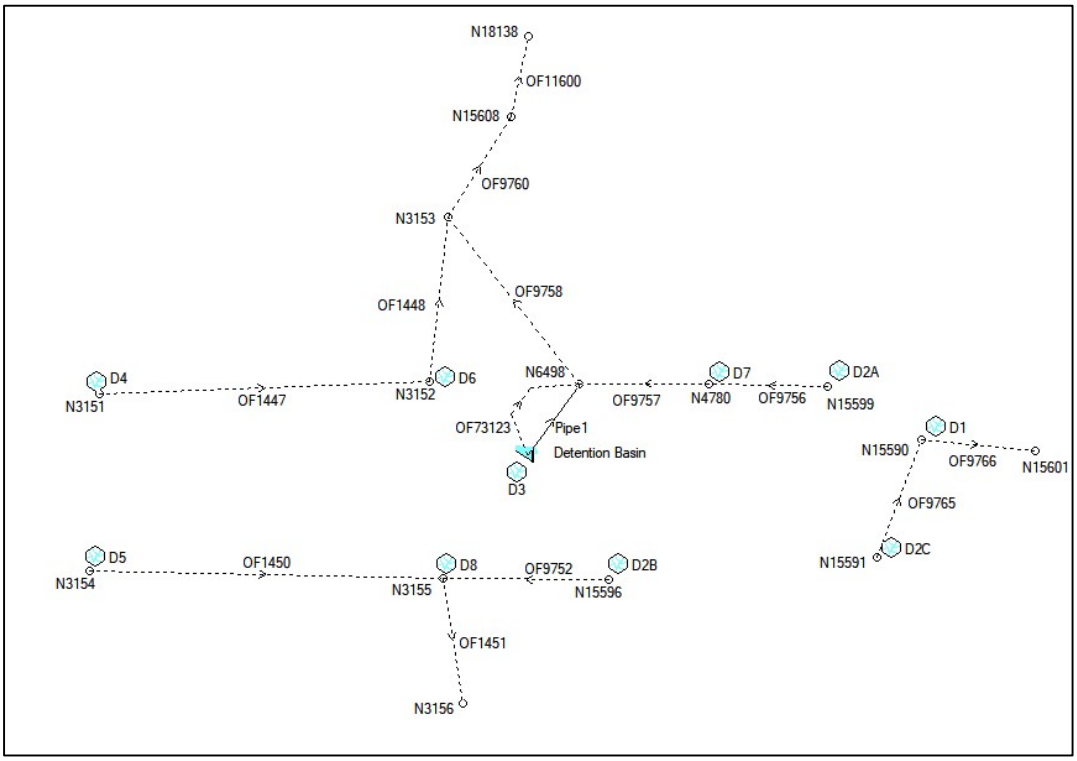


Figure 4-3: Post-developed DRAINS model schematic

4.4.3 Median peak flow rate comparison (worst case scenario)

It is noted that Catchments D1, D2A, D2B, D2C, and D3 will each have quarry pits with sumps which will trap runoff until it eventually evaporates. To provide a conservative outcome, these areas have not been subtracted from the post-developed analysis in the worst-case scenario.

A comparison of the median peak flow rates at the assessment locations are provided in the following table.

Table 4-4: Comparison of pre- and post-development median peak flow rates for worst case scenario

Assessment location	Scenario	1EY	0.5EY	0.2EY	10% AEP	5% AEP	2% AEP	1% AEP
1	Pre-development (m^3/s)	0.363	0.608	1.270	1.760	2.260	2.840	3.310
	Post-development (m^3/s)	1.240	1.600	2.310	3.100	3.850	4.720	5.410
	Difference (m^3/s)	0.877	0.992	1.040	1.340	1.590	1.880	2.100
2	Pre-development (m^3/s)	1.270	2.070	4.420	6.160	8.030	9.970	11.70
	Post-development (m^3/s)	1.680	2.420	4.480	6.370	8.430	10.30	12.20
	Difference (m^3/s)	0.410	0.350	0.060	0.210	0.400	0.330	0.500
3	Pre-development (m^3/s)	0.742	1.240	2.660	3.620	4.800	5.810	6.800
	Post-development (m^3/s)	0.720	1.280	2.500	3.550	4.520	5.440	6.510
	Difference (m^3/s)	-0.022	0.040	-0.160	-0.070	-0.280	-0.370	-0.290

4.4.1 Median peak flow rate comparison (design scenario)

For the design scenario, It has been assumed that 60% of the catchments D1, D2A, D2B, D2B, and D3 will be a quarry pit with a sump. It is expected that the rest of the area will be utilised by site office buildings or parking areas for heavy vehicles.

A comparison of the median peak flow rates at the assessment locations are provided in the following table.

Table 4-5: Comparison of pre- and post-development median peak flow rates for design scenario

Assessment location	Scenario	1EY	0.5EY	0.2EY	10% AEP	5% AEP	2% AEP	1% AEP
1	Pre-development (m^3/s)	0.363	0.608	1.270	1.760	2.260	2.840	3.310
	Post-development (m^3/s)	0.745	0.962	1.380	1.860	2.310	2.820	3.240
	Difference (m^3/s)	0.382	0.354	0.110	0.100	-0.050	-0.010	-0.070
2	Pre-development (m^3/s)	1.270	2.070	4.420	6.610	8.030	9.970	11.70
	Post-development (m^3/s)	0.898	1.500	3.100	4.300	5.500	7.500	8.990
	Difference (m^3/s)	-0.372	-0.570	-1.320	-1.860	-2.530	-2.470	-2.710
3	Pre-development (m^3/s)	0.742	1.240	2.260	3.620	4.800	5.810	6.800
	Post-development (m^3/s)	0.644	1.120	2.220	3.140	4.060	4.950	5.780
	Difference (m^3/s)	-0.098	-0.120	-0.440	-0.480	-0.740	-0.860	-1.020

4.4.1 Stormwater quantity discussion

As previously stated, the stormwater quantity assessment has considered the worst-case scenario where the quarry pits have an impact on the catchment areas and a design scenario where the proposed pits have been excavated. The DRAINS modelling shows that in the worst-cast scenario post-developed analysis, it is calculated that Discharge Location 1 and Discharge Location 2 will have an increase in peak runoff flow for all storm events. Discharge Location 3 is estimated to have a decrease in the peak runoff flow in the post developed scenario.

The design scenario shows that as quarry operations are undertaken and the pit becomes larger, the catchment area that contributes to the assessment location reduces. Runoff will become trapped within the quarry pit sump and will eventually evaporate. The DRAINS modelling shows that if 60% of the extractive areas are excavated, a reduction in the median peak runoff flows at all three assessment locations is expected for the major storm event.

Therefore, it can be expected that once excavation begins on site, the peak runoff flow at the discharge locations will reduce.

Based on DRAINS modelling and the management strategy outlined in this report, the proposed development will not result in an actionable nuisance with quantifiable loss to properties or road infrastructure, state-controlled or otherwise, downstream of the development.

4.5 Peak Flow Rate Mitigations

4.5.1 Assessment Location 1 flow mitigation

The post-development catchment area discharging to the eastern site boundary is larger than the existing catchment and the post-development fraction impervious has remained the same.

Due to the increased catchment area and the increased fraction impervious, post-development surface flows are greater than existing conditions.

Given the location of the site, along with the local land uses, on-site mitigation of post-development peak flow rates is considered unnecessary. Flows from the site will continue along the natural flow paths toward an existing waterway and highly vegetated area to the east.

Therefore, no on-site detention is required for post-development flows discharging towards the east.

4.5.2 Assessment Location 2 flow mitigation

The post-development catchment area discharging to the northern site boundary is larger than the existing catchment and the post-development fraction impervious has increased.

Due to the increased catchment area and the increased fraction impervious, post-development surface flows are greater than existing levels.

Therefore, on-site detention is required for post-development flows discharging towards the north. The detention basin will contain the peak flows before discharging through the pipe outlet.

Detention Basin Design

DRAINS modelling showed that detention was required for Catchment D3 which discharges north towards the Balonne Highway. The detention basin will capture and store all runoff flow from the catchment before discharging it through a pipe and weir outlet.

The detention basin for catchment D3 has been designed with the following parameters:

- 100m length x 75m width
- 20.0m weir length
- 0.6m depth
- 0.3m freeboard
- 2/525 dia. pipe outlet

Appendix F details the detention basin layout plan and cross section.

4.5.3 Assessment Location 3 flow mitigation

The post-development catchment area discharging to the southern site boundary is less than the existing catchment, and the post-development fraction impervious remains the same as the existing case.

Due to the reduced catchment area, post-development surface flows are less than existing levels.

Therefore, no on-site detention is required for post-development flows discharging towards the south.

4.5.4 Sump

A sump is located in the lowest spot within the quarry pits. Runoff internal to the quarry pits is conveyed to a sump for storage.

The runoff stored within a sump is re-used for internal purposes.

The quarry sumps act as large evaporation ponds. The runoff is exposed to sunlight and relatively dry air allowing the water to evaporate into the atmosphere, leaving behind dissolved contaminants and/or minerals.

The sump size, location and maintenance are incorporated into the operational management of the overall quarry. The sump is therefore periodically adjusted to suit the internal quarry operations.

5. Stormwater Quality

5.1 General

The State Planning Policy (SPP) released in July 2017 provides guidelines on the application of stormwater quality treatment.

The site is located within the Western Queensland climatic region. The SPP states that the pollutant reduction design objectives for the Western Queensland climatic region are applicable for:

- A Material Change of Use for an urban purpose that involves premises 2,500 m^2 or greater in size and:
  - will result in six or more dwellings; or
  - an impervious area greater than 25 percent of the net developable area
- Reconfiguring a lot for urban purposes that involves premises 2,500 m^2 or greater in size and will result in six or more lots.
- Operational works for an urban purpose that involves disturbing a land area 2,500m^2 or greater in size

The SPP water quality pollutant load reductions do not apply to the development given the location of the site.

Design standards outlined within this report refer to the specification of materials, processes, and performance requirements for sediment basin. The sediment basin has been designed in accordance with the Best Practice Erosion and Sediment Control (IECA 2008) guideline.

A Type D sediment basin has been designed for the development. The design Type D sediment basin intends to capture all of the runoff from rainfall depths up to the 24 hour storm duration for the 5 year design storm event.

5.2 Erosion control design standard

Erosion control measures will be implemented to either prevent or minimise soil erosion, particularly due to raindrop impact. Common examples of erosion control for similar developments include revegetation, mulching, gravel, soil binding, soil roughening, geotextiles and compost blankets.

The default erosion control standard refers to erosion risk, which is preferentially based on monthly erosivity (R-factor).

5.3 Sediment control design standard

Sediment control measures are implemented to trap sediment that has been displaced by upslope soil erosion. Common examples of sediment control for similar developments include sediment fencing, sediment basin, buffer zones and mulch filter bunds.

The default sediment control standard makes reference to the estimated monthly (or annual) soil loss rate using the RUSLE. The soil loss rate limit defines the maximum allowable soil loss rate from a given catchment draining area to a sediment trap at any instance during the operations. Refer to **Table 5-1**.

Table 5-1: Sediment control standard (default) based on soil loss rate

Area limit (m^2) [1]	Soil loss rate limit (t/ha/yr) [2]			Soil loss rate limit (t/ha/month) [3]		
	Type 1	Type 2	Type 3	Type 1	Type 2	Type 3
250	N/A	N/A	[4]	N/A	N/A	[4]
1000	N/A	N/A	All cases	N/A	N/A	All cases
2500	N/A	> 75	75	N/A	> 6.25	6.25
>2500	> 150	150	75	> 12.5	12.5	6.25

[4] Refer to relevant regulatory authority for assessment procedures. The default standard is a Type 3 sediment trap.

Alternatively, the monthly rainfall erosivity (R-factor) may be used as an initial check to determine what type of sediment control may be required. Refer to **Table 5-2**.

Table 5-2: Alternative sediment control standards based on monthly erosivity and average monthly rainfall

Area limit (m^2) [1]	Monthly erosivity (R-factor) [2]		
	Type 1	Type 2	Type 3
250	N/A	N/A	[3]
1000	N/A	N/A	All cases
2500	N/A	> 60	60
>2500	> 100	100	60

Outlined by the IECA (Appendix B Figure B7), the settling zone for a Type D Sediment Basin has two distinct zones; the upper settling zone (minimum 600mm in depth) and the lower sediment storage zone. The sediment storage zone is typically designed to be 50% of the settling zone or a minimum of 2 months of estimated soil loss. Refer to **Figure 5-1.**

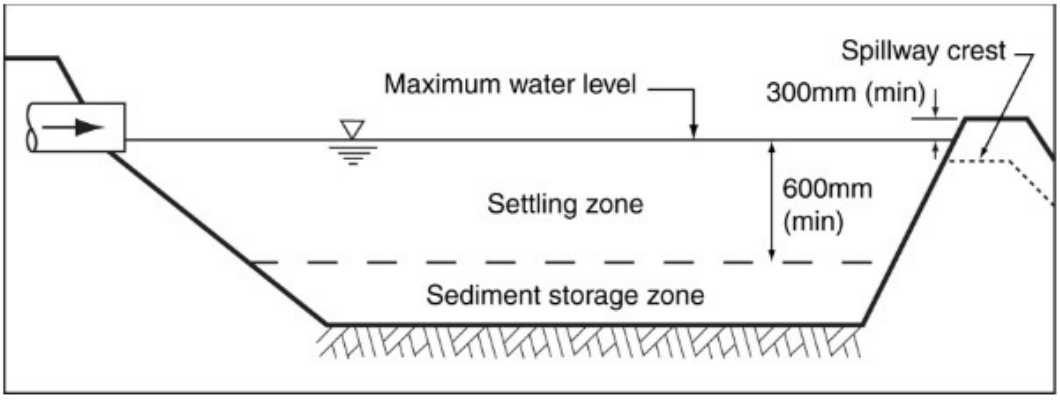


Figure 5-1: Settling zone and sediment storage zone for Type D basin

Within the analysis, a clean out frequency of 6 months was adopted to size the sediment storage zone. The size of the sediment storage zone is a function of the frequency of how often the sediment basin needs to be maintained (de-silted). Whist the de-silting has been assumed to occur at a 6-month interval, the sediment basin will be monitored on-site and de-silting will be undertaken as required. Should the soil loss assumptions in the analysis differ to the on-site requirements, the sediment storage volume can be increased accordingly to accommodate the additional soil loss without a detrimental change to the performance of the settling zone.

Eash sediment basin requires the following dimensions:

- A depth of 0.7m (0.6m settling zone, 0.1m sediment storage zone)
- 1V in 3H side slopes

Specifications of the required sediment basins are detailed in the following table.

Table 5-3: Pre-development catchment details

Basin ID	Catchment ID	Dimensions (m)	Weir Length (m)
Basin D1	D1	100 x 55	20
Basin D2A	D2A	60 x 30	20
Basin D2B	D2B	60 x 35	20
Basin D3	D3	80 x 55	20

5.4 Flocculants and coagulants

There are numerous different chemical reagent options available for treating sediment in stormwater. When selecting an appropriate reagent, it is important to have consideration for any negative environmental impacts or potential harm to persons.

Common factors that influence the effectiveness of the flocculation process include:

- Homogeneity of the source water i.e. Waters with little turbidity or of variable quality make good flocculation difficult. It is important to note that the composition of organic material also impacts the process.
- Dose control which when left unregulated can lead to poor floc formation.
- Contact between chemicals and water when ensuring that there is enough time to allow flocs to form.

The chemical treatment must be added with even mixing and slowed during flocculation to ensure breaking up of flocculated sediments.

Benchtop and site trials involving soil from the site would need to be undertaken to determine the appropriate chemical reagents for treating water. Examples of some chemical products recommended dosages are shown below in **Table 5-4**.

Table 5-4 Recommended dosage rates for some chemical treatment products

Product	RDR per ML	Chemical group
Gypsum	300-600 kg	Calcium sulphate
Hydr-Gyp	125 L	Calcium sulphate dihydrate
Triple Strike	100 L	Calcium sulphate aluminium sulphate
Turbi-Clear	8.3 L	Aluminium chloralhydrate, polyaluminium chloride
Alchlor Gold	50 L	Aluminium chlorhydrate, polyaluminium chloride Hydroxide, dialuminium chloride pentahyrdroxide
Multifloc	30 L	Aluminium hydroxychloride (aluminium salt) and organic cationic polyelectrolyte

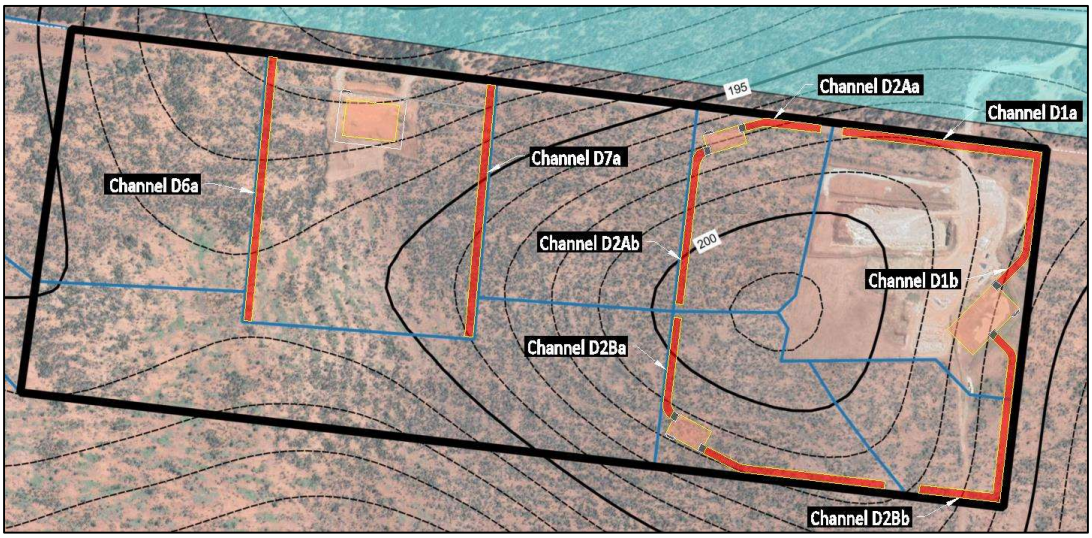
5.5 Dirty water channel design

Mannings open channel equations have been used to size dirty water channels to convey runoff from the development site towards the sediment basins. Dirty water channels are proposed in the catchment areas D1, D2A, D2B, and D2C. Dirty water from extractive area D2C will be directed towards a sediment basin located within D1.

Catch drains (channels D6a and D7a) on the eastern and western boundaries of Catchment D3 will direct flows coming from the surrounding vegetated area away from the quarry pits and towards Assessment Location 2. Bund walls will contain the runoff from D3 and divert them towards the detention basin prior to be discharged.

Dirty water channels proposed in the abovementioned extractive areas are illustrated in **Figure 5-2**.

Figure 5-2: Location of proposed channels



The channels have been sized based on the following dimensions and characteristics:

- A Mannings 'n' value of 0.03
- 4m base width
- 1V in 4H batters
- Minimum longitudinal grade of 0.5%
- Assumed to be bare earth channels

A cross section of the proposed dirty water channel is shown in the figure below.

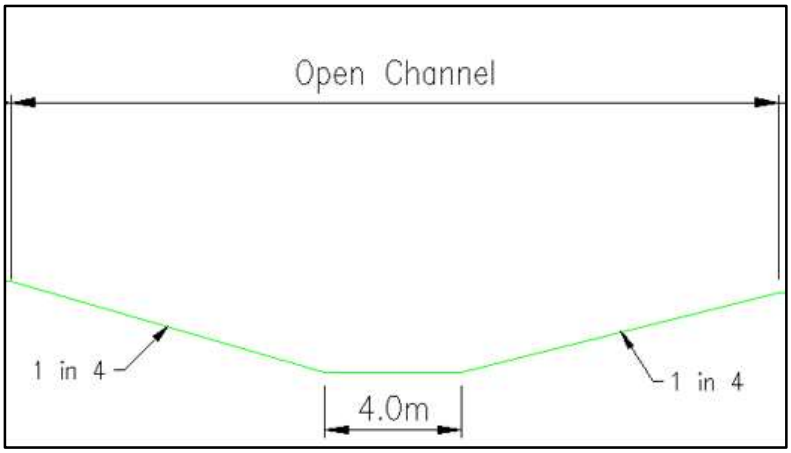


Figure 5-3: Channel section

Where the dirty water channel flows into the sediment basin, the invert of the channel will be lowered to tie into the invert of the sediment basin.

Appendix D details the velocity, depth, and resulting freeboard expected for the specified channel configuration.

5.6 Quarry pit sump

The sump is located in the lowest spot within the quarry pit. Runoff internal to the quarry pit is conveyed to the sump for storage.

The runoff stored within the sump is re-used for internal purposes.

The quarry sump acts as a large evaporation pond. The runoff is exposed to sunlight and relatively dry air allowing the water to evaporate into the atmosphere, leaving behind dissolved contaminants and/or minerals.

The sump size, location and maintenance are incorporated into the operational management of the overall quarry. The sump is therefore periodically adjusted to suit the internal quarry operations.

5.7 Training and competencies

All personnel on site including workers, supervisors, and engineers require a working understanding of the erosion and sediment control measures that are implemented.

It is recommended that all workers should receive basic training. However, senior supervisors should have advanced training and also be involved in the planning and management of the site's erosion and sediment control as they will have a higher level of skill, understanding, and appreciation of the site's constraints.

A basic training induction program should be undertaken by all working personnel before commencing work on site. The induction will cover general erosion and sediment control matters including the relevant legislation, individual responsibilities, specific measures, and water quality objectives. Additional meetings will be used by contractors to address issues related to erosion and sediment control matters.

Advanced training is adopted to target supervisors and relevant staff who will be involved in the planning and management associated with erosion and sediment control. This will involve an overview of the main features of the Primary ESC plan and expand on areas that would benefit from more explanation.

Key items to cover include but are not limited to:

- Regulatory requirements: review the relevant EA conditions and portions of the EP Act and EP Regulation
- Project constraints – topography, soils, climate, catchments
- Design standards
- Suitable controls and design factsheets. A review of the main controls that are expected to be used on site including how they are supposed to function
- Developing progressive ESCP's
- Site ESC inspections and audits
- Maintenance and monitoring requirements.

6. Conclusion

The overall stormwater management strategy outlines that the proposed development will reduce the size of the contributing catchments discharging external to the site in the design scenario. For this case, the reduced catchments will therefore not increase the median post-developed peak flow discharging from the site.

Once excavation begins, the proposed development will not result in an actionable nuisance with quantifiable loss to properties or road infrastructure, state-controlled or otherwise, downstream of the development.

A detention basin has been designed to mitigate median peak runoff flows from post-developed catchment D3. Detained runoff will be discharged to the north through a pipe outlet.

Four sediment basins have been designed for the 24-hour 5 year storm event to mitigate sediment loads leaving the development site.

Dirty water drains have been designed to convey runoff internal to the development to the sediment basin.

Appendix A Layout plan

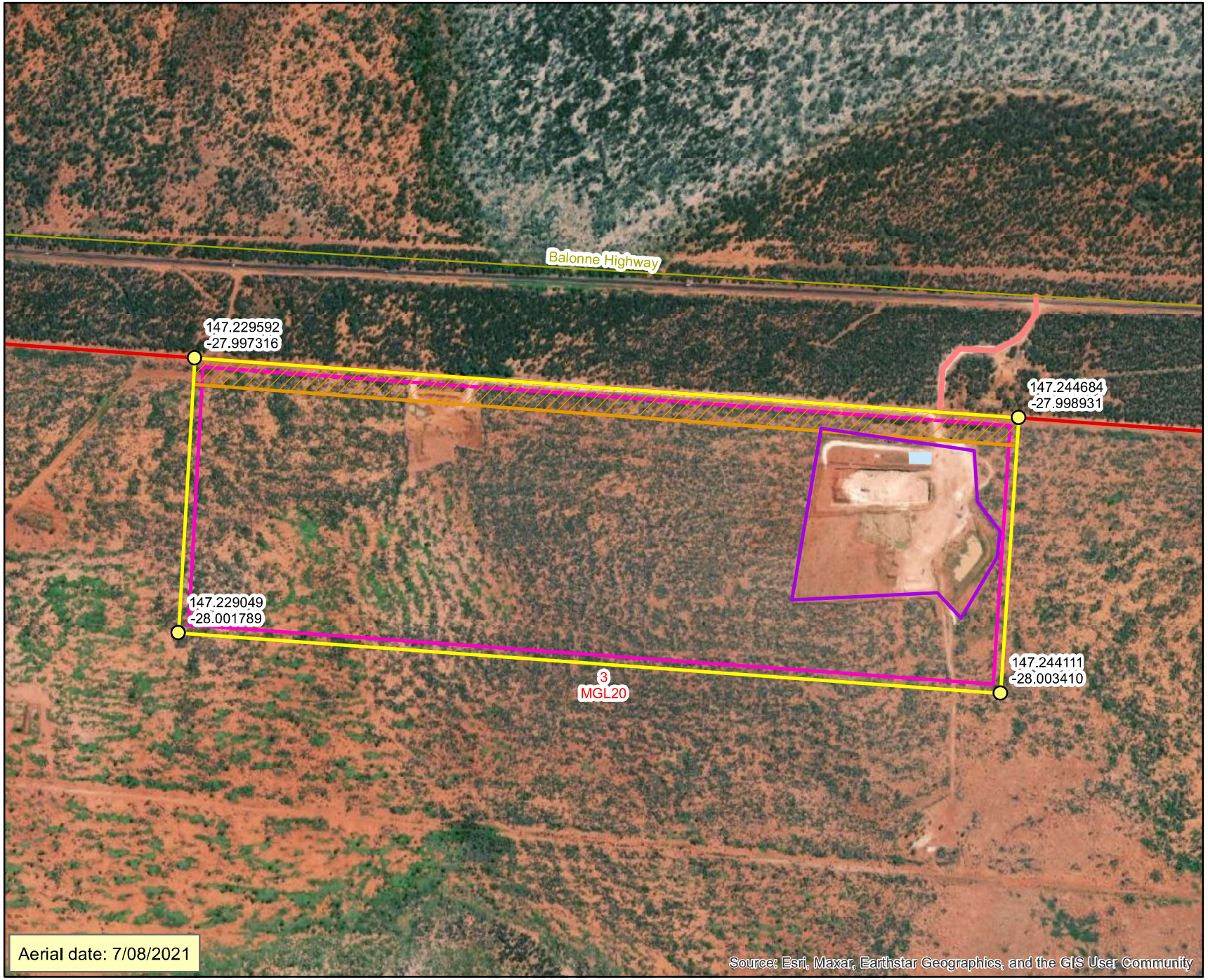


Figure 3
Total Extractive Activities Area

Project: EA Amendment

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 1/12/2023
Approved by: RJM Date: 1/12/2023

Metres
0 125 250

Legend

- Cadastre
- Roads
- Site boundary
- Total Extractive Activities Area
- Existing Extractive Activities Area
- Existing Site Access
- Site office/Diesel AST
- 50m Wide Extraction Exclusion Zone
- 15m Wide Access Allowance

Source: Cadastral data sourced from DNRME (2023).

N

range environmental consultants

Appendix B BOM and AR&R data

Rainfall & Hydrological Data

Project Number:	23E-0152
Latitude:	-28.0151
Longitude:	147.2274

AR&R 2019

Access Date: *14/02/2024*

Source: *http://www.bom.gov.au/water/designRainfalls/revised-ifd/*

Coefficients - Very Frequent

	Annual Exceedance Probability (AEP)							
	12EY	6EY	4EY	3EY	2EY	1EY	0.5EY#	0.2EY*
C0	-0.72996074	-0.47451648	-0.13588163	0.0545725	0.27942833	0.5910424	0.84703827	1.1314979
C1	0.60834455	0.66539812	0.70931792	0.71441954	0.69713944	0.65537739	0.64444959	0.6534307
C2	0.23297273	0.18923324	0.15745345	0.15794937	0.18435779	0.23232691	0.24231307	0.22563498
C3	-0.12371176	-0.11378964	-0.10560044	-0.10580777	-0.11536233	-0.12804505	-0.13065632	-0.12048769
C4	0.023271658	0.022512928	0.021403117	0.021203088	0.022502365	0.023223806	0.023372514	0.020767853
C5	-0.001956461	-0.001961524	-0.001878044	-0.001832391	-0.001900475	-0.001820447	-0.00180518	-0.001520237
C6	6.10014E-05	6.29646E-05	6.02178E-05	5.77376E-05	5.86621E-05	5.16991E-05	5.03997E-05	3.93233E-05

IFD Design Rainfall Depth (mm) - Very Frequent

Duration	Annual Exceedance Probability (AEP)							
	12EY	6EY	4EY	3EY	2EY	1EY	0.5EY#	0.2EY*
1 min	0.48	0.62	0.87	1.06	1.32	1.81	2.33	3.10
2 min	0.79	1.05	1.49	1.81	2.27	3.06	3.94	5.24
3 min	1.09	1.44	2.06	2.50	3.14	4.27	5.50	7.31
4 min	1.36	1.79	2.56	3.11	3.92	5.38	6.93	9.20
5 min	1.60	2.10	3.00	3.65	4.62	6.37	8.21	10.90
10 min	2.54	3.28	4.63	5.65	7.19	10.09	13.04	17.33
15 min	3.19	4.08	5.72	6.98	8.89	12.57	16.26	21.63
20 min	3.68	4.68	6.54	7.96	10.15	14.37	18.59	24.75
25 min	4.08	5.17	7.19	8.75	11.14	15.78	20.41	27.17
30 min	4.41	5.57	7.74	9.41	11.96	16.93	21.88	29.12
45 min	5.19	6.52	9.00	10.91	13.81	19.45	25.09	33.37
1 hour	5.76	7.23	9.95	12.03	15.17	21.24	27.34	36.30
1.5 hour	6.63	8.31	11.39	13.72	17.20	23.81	30.55	40.40
2 hour	7.29	9.15	12.51	15.03	18.76	25.73	32.93	43.39
3 hour	8.32	10.46	14.28	17.09	21.19	28.68	36.57	47.91
4.5 hour	9.48	11.96	16.30	19.45	23.99	32.07	40.75	53.04
6 hour	10.40	13.15	17.92	21.34	26.23	34.82	44.16	57.22
9 hour	11.82	14.99	20.44	24.30	29.80	39.30	49.71	64.09
12 hour	12.92	16.39	22.37	26.61	32.61	42.93	54.25	69.76
18 hour	14.53	18.46	25.24	30.05	36.88	48.67	61.49	78.96
24 hour	15.69	19.92	27.28	32.54	40.03	53.11	67.15	86.30
30 hour	16.57	21.01	28.82	34.44	42.47	56.68	71.74	92.36
36 hour	17.25	21.85	30.00	35.91	44.41	59.61	75.54	97.46
48 hour	18.23	23.04	31.68	38.04	47.28	64.12	81.44	105.56
72 hour	19.34	24.34	33.51	40.41	50.63	69.73	88.93	116.16
96 hour	19.87	24.95	34.34	41.51	52.34	72.73	93.04	122.21
120 hour	20.14	25.24	34.72	42.01	53.21	74.26	95.20	125.47
144 hour	20.26	25.39	34.86	42.18	53.62	74.89	96.16	126.94
168 hour	20.31	25.46	34.89	42.19	53.77	74.94	96.33	127.18

IFD Design Rainfall Intensity (mm/h)

Duration	Annual Exceedance Probability (AEP)							
	12EY	6EY	4EY	3EY	2EY	1EY	0.5EY#	0.2EY*
1 min	28.92	37.33	52.38	63.37	79.34	108.35	139.96	186.02
2 min	23.78	31.37	44.80	54.39	67.96	91.89	118.27	157.35
3 min	21.80	28.78	41.16	50.08	62.83	85.49	110.08	146.28
4 min	20.41	26.84	38.34	46.71	58.83	80.63	103.91	138.00
5 min	19.26	25.23	35.97	43.85	55.39	76.39	98.53	130.82
10 min	15.24	19.66	27.77	33.89	43.11	60.53	78.26	104.01
15 min	12.76	16.31	22.88	27.90	35.56	50.26	65.02	86.50
20 min	11.05	14.04	19.61	23.89	30.44	43.12	55.78	74.26
25 min	9.79	12.40	17.25	21.00	26.73	37.88	48.98	65.21
30 min	8.83	11.15	15.47	18.81	23.91	33.86	43.75	58.25
45 min	6.91	8.69	12.00	14.55	18.42	25.94	33.46	44.49
1 hour	5.76	7.23	9.95	12.03	15.17	21.24	27.34	36.30
1.5 hour	4.42	5.54	7.59	9.15	11.47	15.87	20.37	26.94
2 hour	3.65	4.58	6.26	7.52	9.38	12.86	16.46	21.70
3 hour	2.77	3.49	4.76	5.70	7.06	9.56	12.19	15.97
4.5 hour	2.11	2.66	3.62	4.32	5.33	7.13	9.06	11.79
6 hour	1.73	2.19	2.99	3.56	4.37	5.80	7.36	9.54
9 hour	1.31	1.67	2.27	2.70	3.31	4.37	5.52	7.12
12 hour	1.08	1.37	1.86	2.22	2.72	3.58	4.52	5.81
18 hour	0.81	1.03	1.40	1.67	2.05	2.70	3.42	4.39
24 hour	0.65	0.83	1.14	1.36	1.67	2.21	2.80	3.60
30 hour	0.55	0.70	0.96	1.15	1.42	1.89	2.39	3.08
36 hour	0.48	0.61	0.83	1.00	1.23	1.66	2.10	2.71
48 hour	0.38	0.48	0.66	0.79	0.98	1.34	1.70	2.20
72 hour	0.27	0.34	0.47	0.56	0.70	0.97	1.24	1.61
96 hour	0.21	0.26	0.36	0.43	0.55	0.76	0.97	1.27
120 hour	0.17	0.21	0.29	0.35	0.44	0.62	0.79	1.05
144 hour	0.14	0.18	0.24	0.29	0.37	0.52	0.67	0.88
168 hour	0.12	0.15	0.21	0.25	0.32	0.45	0.57	0.76

Note:

 # The 0.5 EY design rainfall corresponds to the 2 year Average Recurrence Interval (ARI) IFD ***not*** *the 50% AEP IFD.*

** The 0.2 EY design rainfall corresponds to the 5 year Average Recurrence Interval (ARI) IFD* ***not*** *the 20% AEP IFD.*

Coefficients - Frequent and Infrequent

	Annual Exceedance Probability (AEP)						
	63.2% AEP	50% AEP	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP
C0	0.5910424	0.74267828	1.1116952	1.304333	1.4641896	1.6449834	1.7656406
C1	0.65537739	0.64444971	0.65343046	0.67865199	0.69949299	0.69963479	0.70761597
C2	0.23232691	0.24231298	0.22563525	0.19318987	0.16742879	0.16675945	0.15665056
C3	-0.12804505	-0.1306563	-0.1204878	-0.10556003	-0.094358608	-0.094269857	-0.089981697
C4	0.023223806	0.02337251	0.020767873	0.017670322	0.015507275	0.01560621	0.014826464
C5	-0.001820447	-0.00180518	-0.001520239	-0.00122545	-0.001034935	-0.001055389	-0.000988664
C6	5.16991E-05	5.03997E-05	3.93234E-05	2.8853E-05	2.26087E-05	2.36686E-05	2.14206E-05

IFD Design Rainfall Depth (mm) - Frequent and Infrequent

Duration	Annual Exceedance Probability (AEP)						
	63.2% AEP	50% AEP#	20% AEP*	10% AEP	5% AEP	2% AEP	1% AEP
1 min	1.81	2.10	3.04	3.69	4.32	5.18	5.85
2 min	3.06	3.55	5.14	6.27	7.40	8.86	10.02
3 min	4.27	4.96	7.17	8.73	10.28	12.32	13.91
4 min	5.38	6.24	9.02	10.96	12.89	15.43	17.42
5 min	6.37	7.40	10.69	12.97	15.23	18.24	20.58
10 min	10.09	11.75	16.99	20.58	24.12	28.88	32.56
15 min	12.57	14.64	21.20	25.68	30.10	36.07	40.67
20 min	14.37	16.75	24.27	29.42	34.50	41.36	46.68
25 min	15.78	18.39	26.64	32.32	37.93	45.51	51.38
30 min	16.93	19.71	28.55	34.66	40.72	48.88	55.23
45 min	19.45	22.61	32.71	39.77	46.80	56.27	63.69
1 hour	21.24	24.63	35.59	43.29	51.01	61.41	69.60
1.5 hour	23.81	27.52	39.61	48.20	56.87	68.61	77.92
2 hour	25.73	29.67	42.54	51.75	61.09	73.81	83.96
3 hour	28.68	32.95	46.97	57.05	67.36	81.57	92.97
4.5 hour	32.07	36.71	52.00	63.03	74.35	90.23	103.03
6 hour	34.82	39.78	56.10	67.87	79.99	97.20	111.12
9 hour	39.30	44.79	62.83	75.82	89.20	108.56	124.28
12 hour	42.93	48.87	68.39	82.40	96.81	117.92	135.10
18 hour	48.67	55.40	77.41	93.15	109.26	133.16	152.69
24 hour	53.11	60.49	84.61	101.80	119.30	145.43	166.80
30 hour	56.68	64.63	90.55	109.00	127.71	155.66	178.53
36 hour	59.61	68.05	95.55	115.12	134.87	164.36	188.49
48 hour	64.12	73.37	103.49	124.89	146.41	178.36	204.44
72 hour	69.73	80.11	113.89	137.87	161.93	197.17	225.64
96 hour	72.73	83.82	119.81	145.31	171.04	208.22	237.81
120 hour	74.26	85.77	123.01	149.29	176.07	214.39	244.31
144 hour	74.89	86.63	124.45	150.98	178.36	217.27	247.01
168 hour	74.94	86.79	124.69	151.08	178.72	217.85	247.08

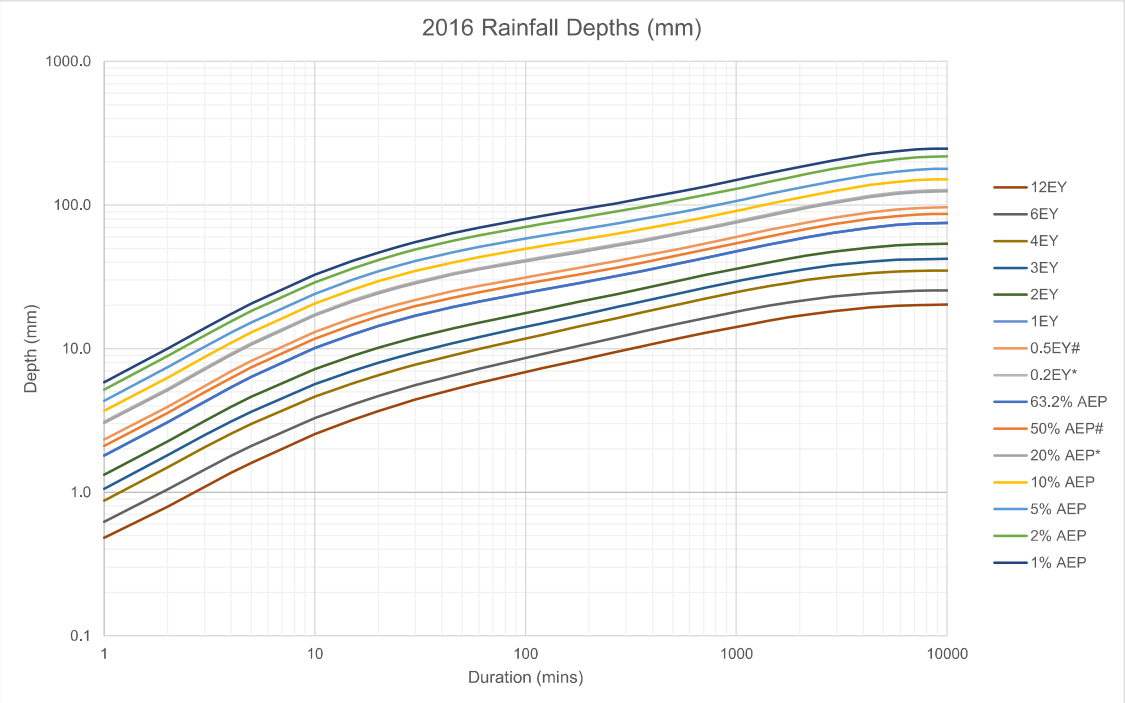
IFD Design Rainfall Intensity (mm/h) - Frequent and Infrequent

Duration	Annual Exceedance Probability (AEP)						
	63.2% AEP	50% AEP#	20% AEP*	10% AEP	5% AEP	2% AEP	1% AEP
1 min	108.35	126.09	182.37	221.11	259.44	310.86	350.72
2 min	91.89	106.55	154.26	188.20	222.00	265.95	300.63
3 min	85.49	99.17	143.42	174.63	205.68	246.34	278.27
4 min	80.63	93.61	135.29	164.42	193.34	231.52	261.34
5 min	76.39	88.76	128.26	155.66	182.81	218.89	246.96
10 min	60.53	70.50	101.97	123.47	144.70	173.28	195.34
15 min	50.26	58.58	84.81	102.73	120.40	144.26	162.69
20 min	43.12	50.26	72.80	88.25	103.51	124.09	140.03
25 min	37.88	44.13	63.93	77.56	91.04	109.21	123.32
30 min	33.86	39.42	57.11	69.33	81.44	97.75	110.45
45 min	25.94	30.14	43.62	53.02	62.40	75.02	84.91
1 hour	21.24	24.63	35.59	43.29	51.01	61.41	69.60
1.5 hour	15.87	18.35	26.41	32.13	37.91	45.74	51.95
2 hour	12.86	14.83	21.27	25.87	30.54	36.90	41.98
3 hour	9.56	10.98	15.66	19.02	22.45	27.19	30.99
4.5 hour	7.13	8.16	11.56	14.01	16.52	20.05	22.90
6 hour	5.80	6.63	9.35	11.31	13.33	16.20	18.52
9 hour	4.37	4.98	6.98	8.42	9.91	12.06	13.81
12 hour	3.58	4.07	5.70	6.87	8.07	9.83	11.26
18 hour	2.70	3.08	4.30	5.18	6.07	7.40	8.48
24 hour	2.21	2.52	3.53	4.24	4.97	6.06	6.95
30 hour	1.89	2.15	3.02	3.63	4.26	5.19	5.95
36 hour	1.66	1.89	2.65	3.20	3.75	4.57	5.24
48 hour	1.34	1.53	2.16	2.60	3.05	3.72	4.26
72 hour	0.97	1.11	1.58	1.91	2.25	2.74	3.13
96 hour	0.76	0.87	1.25	1.51	1.78	2.17	2.48
120 hour	0.62	0.71	1.03	1.24	1.47	1.79	2.04
144 hour	0.52	0.60	0.86	1.05	1.24	1.51	1.72
168 hour	0.45	0.52	0.74	0.90	1.06	1.30	1.47

Note:

*# The 50% AEP IFD **does not** correspond to the 2 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 1.44 ARI.*

** The 20% AEP IFD **does not** correspond to the 5 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 4.48 ARI.*



AR&R Datahub Information

Adopted Temporal Pattern	Rangelands

Median Preburst Depths and Ratios (mm)

Duration (hours)	AEP (%)					
	50	20	10	5	2	1
1	0.4	1.3	1.8	2.4	2.2	2.2
1.5	0.3	0.8	1.2	1.5	1.4	1.3
2	0.0	0.4	0.7	0.9	0.8	0.8
3	0.1	0.3	0.4	0.5	0.5	0.6
6	0.0	0.1	0.2	0.3	0.7	1.0
12	0.0	0.0	0.0	0.0	0.4	0.6
18	0.0	0.0	0.0	0.0	0.1	0.1
24	0.0	0.0	0.0	0.0	0.4	0.7
36	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.0	0.0

Storm Losses

ID	19839
Storm Initial Losses (mm)	80
Storm Continuing Losses (mm/h)	2.4
Time Accessed	01 November 2023 09:59AM
Version	2016_v1

Adopted Pervious Losses

(Validated to Rational Method)	
Initial Loss (mm)	22
Continuing Loss (mm/hr)	2

Interim Climate Change Factors

Year	RCP 4.5	RCP 6	RCP 8.5
2030	1.010 (5.1%)	0.854 (4.3%)	1.022 (5.1%)
2040	1.262 (6.3%)	1.185 (6.0%)	1.524 (7.7%)
2050	1.519 (7.7%)	1.490 (7.5%)	2.009 (10.3%)
2060	1.755 (8.9%)	1.787 (9.1%)	2.504 (13.0%)
2070	1.943 (9.9%)	2.094 (10.8%)	3.036 (16.0%)
2080	2.056 (10.6%)	2.428 (12.6%)	3.632 (19.4%)
2090	2.067 (10.6%)	2.808 (14.7%)	4.318 (23.5%)

River Region

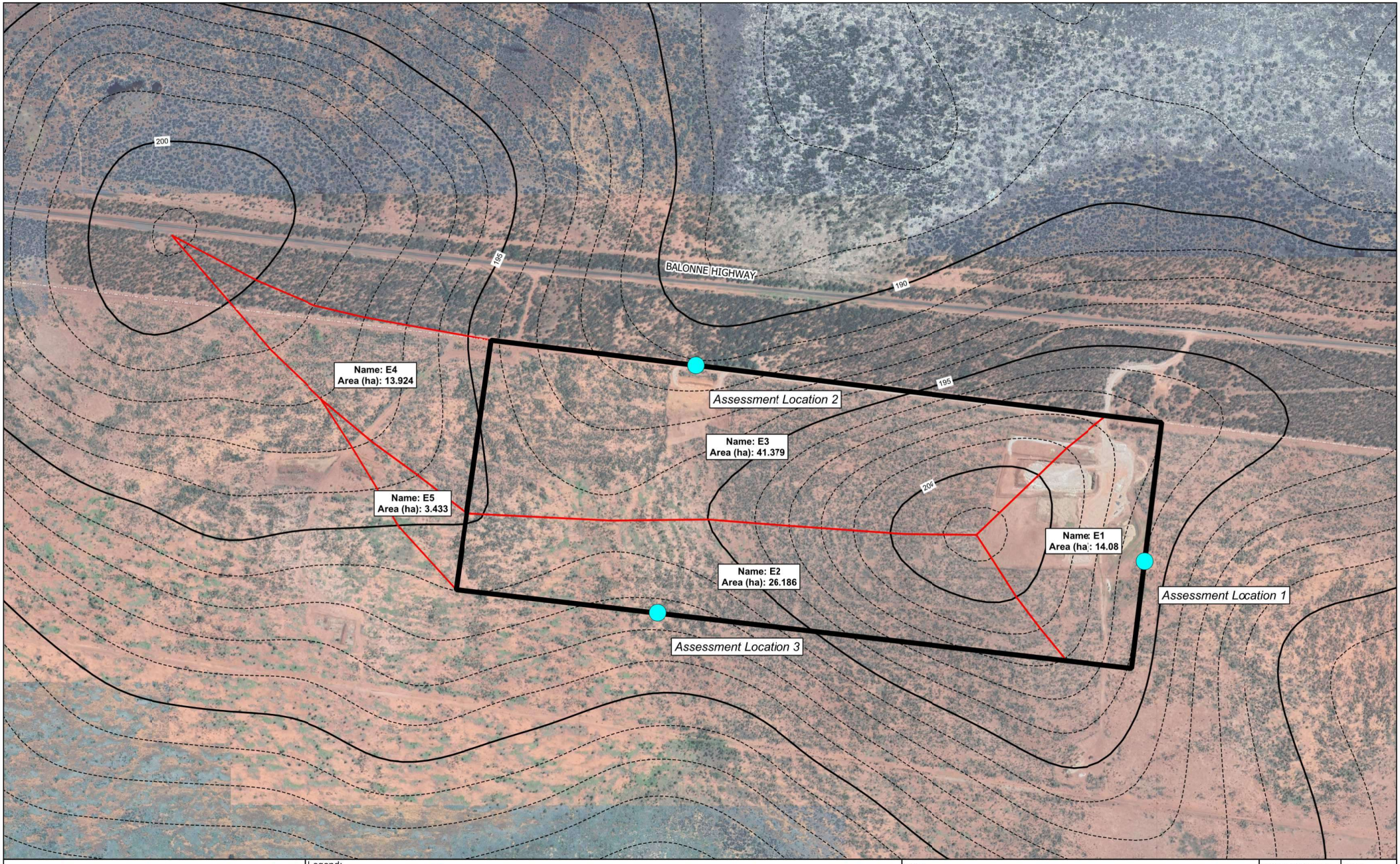
Division	Murray-Darling Basin
River Number	23
River Name	Condamine-Culgoa Rivers

ARF Parameters

Zone	Semi-arid Inland QLD

a	b	c	d	e	f	g	h	i
0.159	0.283	0.25	0.308	0.00000073	1	0.039	0	0

Appendix C Catchment plans



N

Scale (at A3): 1:7,500.009137

0 75 150 225 300

Metres

Geocentric Datum of Australia 1994

Map Grid of Australia Zone 56

RMA Engineers

Legend:

- Site Boundary
- 1m contour
- Minor (1m)
- Major (5m)
- Discharge Location
- Pre-Developed Catchment Boundaries
- Site Boundary

Title:

Pre-developed Catchment Boundary
Quarry - Rockville

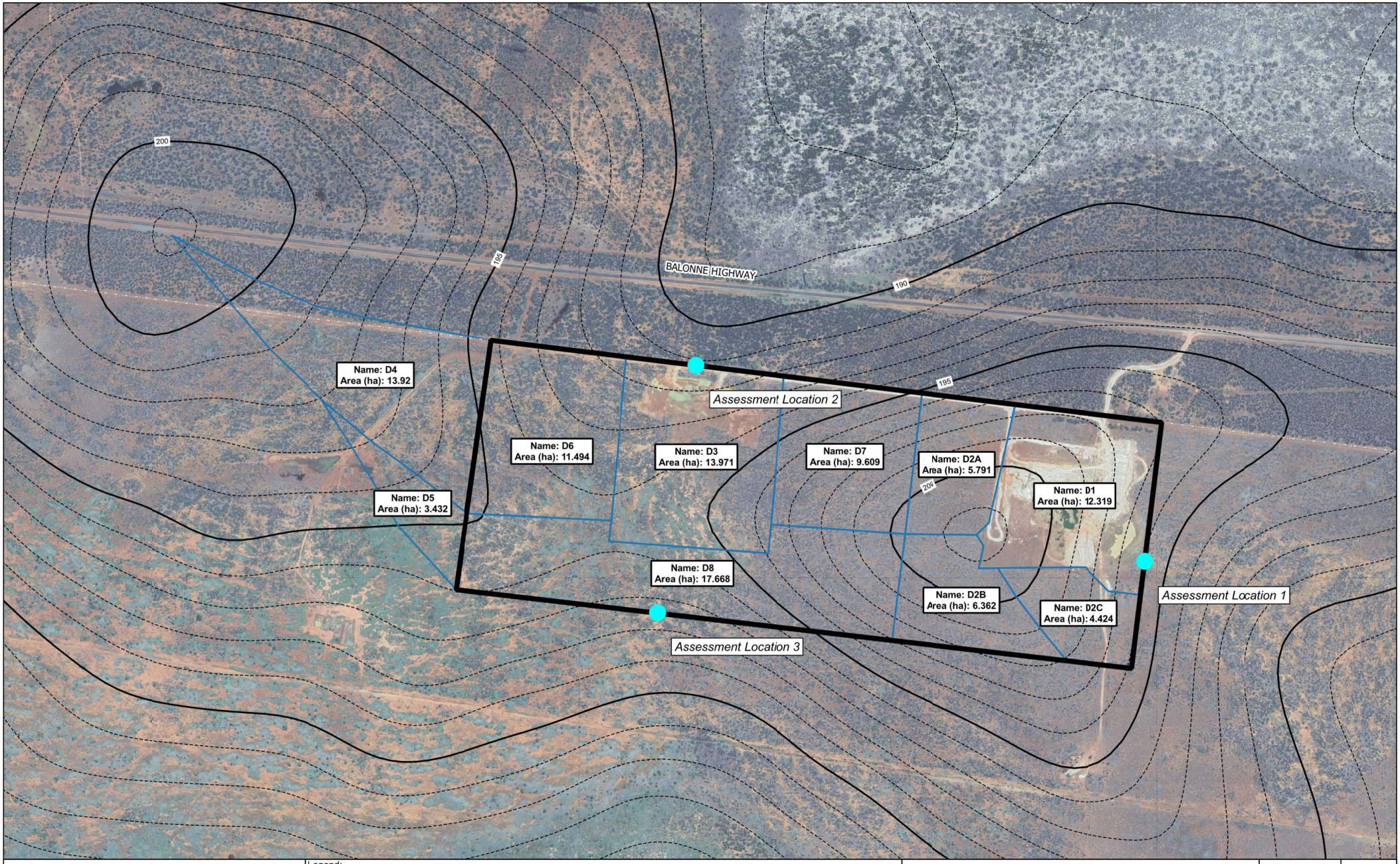
Project Number: **23E-0152**

Rev: **A**

Appendix C.1

Date: 15/02/2024

N:\Synergy\Projects\23E-0152 TIA - Rockville Quarry\4 Design\GIS\Maps\23E-0152_Working_JG.qgs



N

Scale (at A3): 1:7,500.009137

0 75 150 225 300

Metres

Geocentric Datum of Australia 1994

Map Grid of Australia Zone 56

RMA Engineers

Legend:

- Site Boundary Contour
- Minor (1m)
- Major (5m)
- Discharge Location
- Post-Developed Catchment Boundaries
- Site Boundary

Title:

Post-developed Catchment Boundary
Quarry - Rockville

Project Number: **23E-0152**

Rev: **A**

Appendix C.2

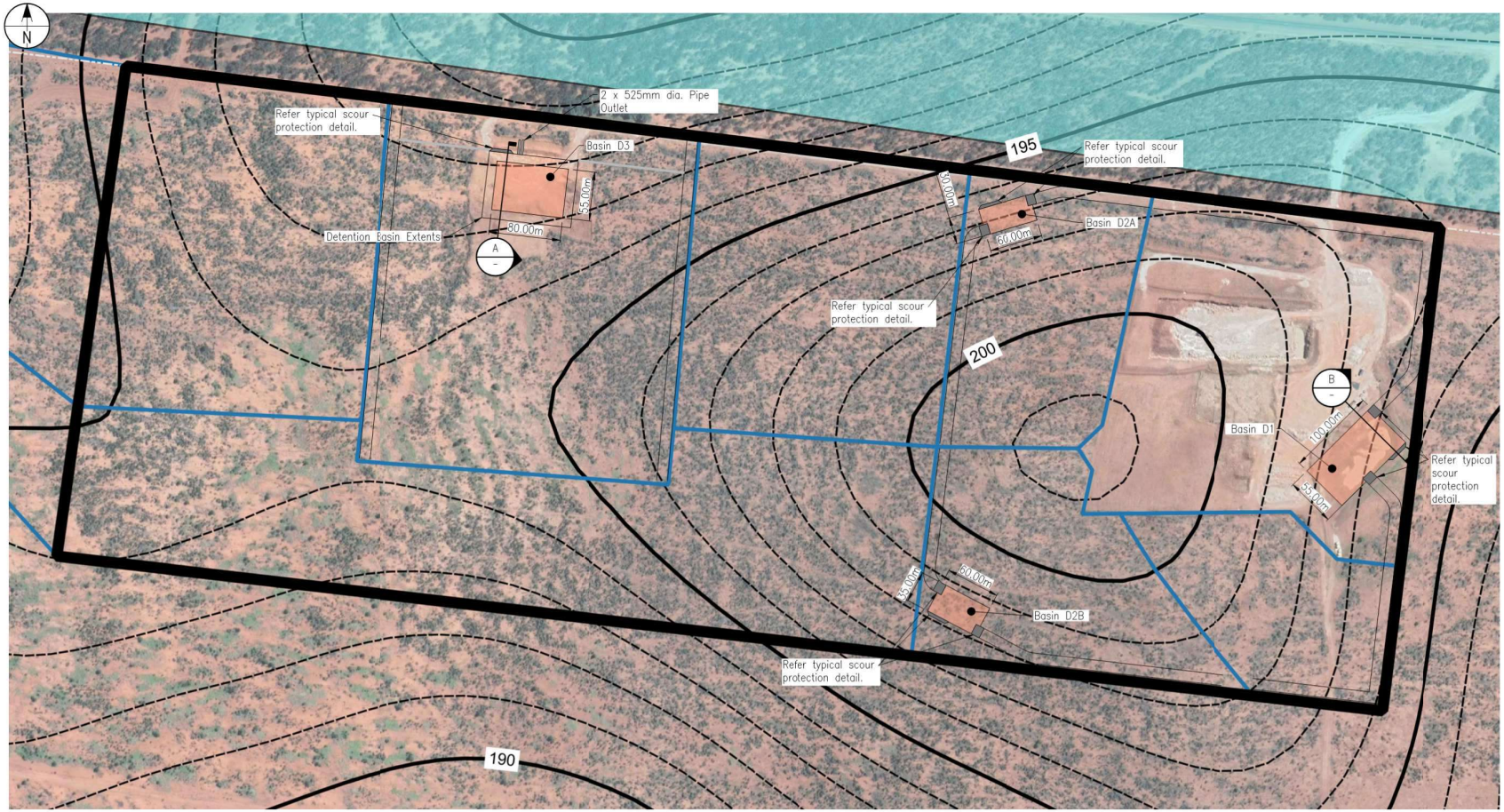
Date: 14/02/2024

N:\Synergy\Projects\23E-0152 TIA - Rockville Quarry\4 Design\GIS\Maps\23E-0152_Working_JG.qgs

Appendix D Open Channel results for major and minor storms

Channel ID	Parameter	Minor Storm	Major Storm
D1a	Flow Depth (m)	0.330	0.502
	Velocity (m/s)	0.963	1.216
	Freeboard (m)	0.295	0.123
D1b	Flow Depth (m)	0.264	0.375
	Velocity (m/s)	0.848	1.034
	Freeboard (m)	0.361	0.250
D2Aa	Flow Depth (m)	0.311	0.440
	Velocity (m/s)	0.932	1.131
	Freeboard (m)	0.314	0.185
D2Ab	Flow Depth (m)	0.311	0.440
	Velocity (m/s)	0.932	1.131
	Freeboard (m)	0.314	0.440
D2Ba	Flow Depth (m)	0.230	0.361
	Velocity (m/s)	0.785	1.013
	Freeboard (m)	0.395	0.264
D2Bb	Flow Depth (m)	0.230	0.361
	Velocity (m/s)	0.785	1.013
	Freeboard (m)	0.395	0.264
D6a	Flow Depth (m)	0.332	0.590
	Velocity (m/s)	0.966	1.328
	Freeboard (m)	0.293	0.035
D7a	Flow Depth (m)	0.240	0.397
	Velocity (m/s)	0.803	1.068
	Freeboard (m)	0.385	0.228

Appendix E Sediment Basin and Channel Design



SEDIMENT BASIN LAYOUT PLAN

Scale 1:2500 (A1)

LEGEND:

- Existing Property Boundary
- Existing Easement Boundary
- Scour protection
- Sediment Basin Area
- Design Minor Contours
- 609.00 Design Major Contours

STAGING NOTES:

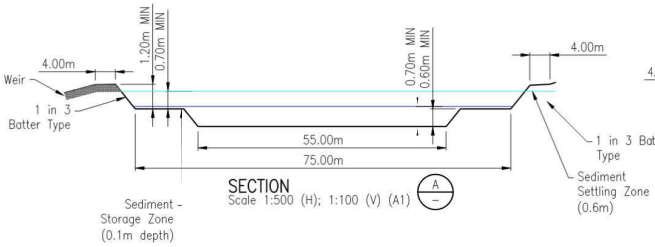
S.1. This development is to be constructed in a single stage.

BASIN 1 STORAGE VOLUMES	
TYPE	APPROX. VOLUME (m^3)
Water Storage	2820
Sediment Storcge	100
Total Storage	2920

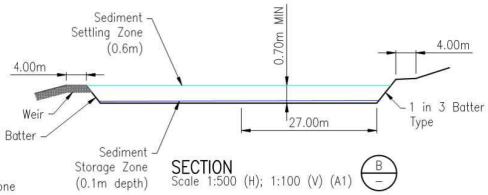
BASIN 2A STORAGE VOLUMES	
TYPE	APPROX. VOLUME (m^3)
Water Storage	980
Sediment Storage	40
Total Storage	1020

BASIN 2B STORAGE VOLUMES	
TYPE	APPROX. VOLUME (m^3)
Water Storage	1120
Sediment Storage	40
Total Storage	1160

BASIN 3 STORAGE VOLUMES	
TYPE	APPROX. VOLUME (m^3)
Water Storage	2350
Sediment Storage	80
Total Storage	2430



SECTION
Scale 1:500 (H); 1:100 (V) (A1) A



SECTION
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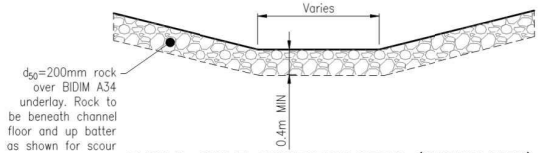

TYPICAL SCOUR PROTECTION DETAIL (SECTION VIEW)
Scale 1:50 (A1)

SCALE BARS
0 1 2m — 1:50(A1) 1:100(A3)
0 ## ## ## ##m — 1:####(A1) 1:####(A3)

ISSUE	DESCRIPTION	DATE	DRN	DES	CHK	APP
A	FOR INFORMATION	10/11/23	MJS		JEG	

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11574 CARNARVON HIGHWAY
ST GEORGE QLD 4487

PROJECT
ROCKVILLE QUARRY | BOLLON
LOT 3 ON MGL20
QLD 4488

TITLE
DIRTY WATER CHANNEL LAYOUT PLAN AND CROSS SECTION

ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT NOTES ON DRAWING G0102

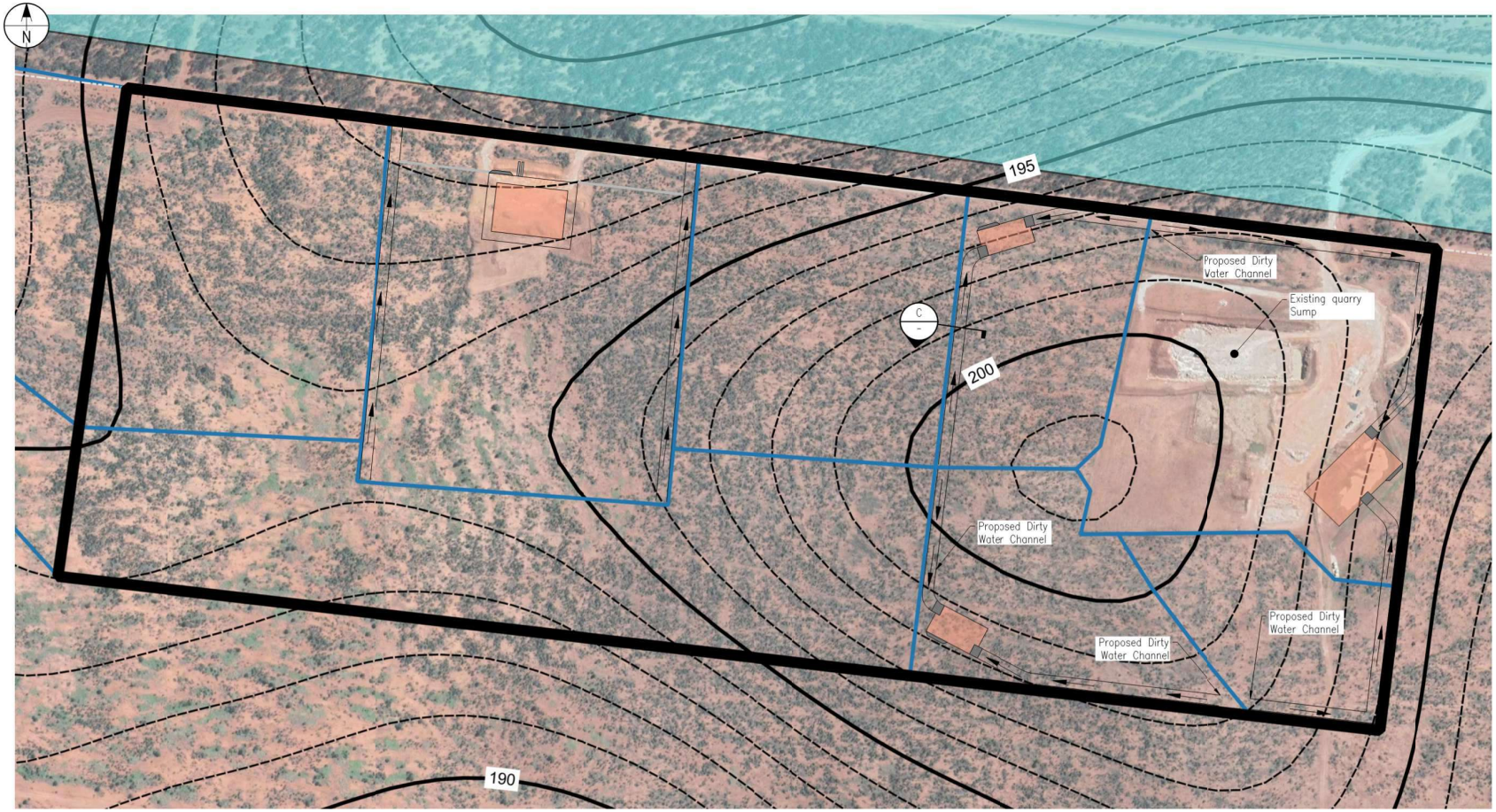
VERIFY ALL ON SITE DIMENSIONS AND LEVELS PRIOR TO CONSTRUCTDN. NOTIFY RMA IMMEDIATELY OF ANY DISCREPANCIES

HEIGHT DATUM	MAP GRID	SIZE
AHD	MGA-55	A1

COUNCIL RAL/MCU NO.

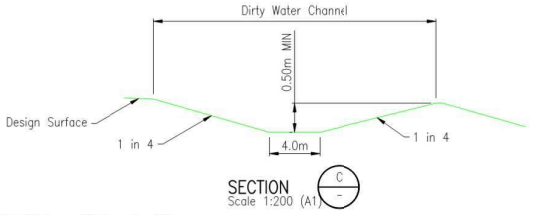
COUNCIL OW NO.

PROJECT NO.	DRAWING NO.	ISSUE
23E-0154	C-C0201	A



DIRTY WATER CHANNEL LAYOUT PLAN

Scale 1:2500 (A1)



NOTE: Minimum 0.5% grade within the dirty water channels.

LEGEND:

- Existing Property Boundary
- Existing Easement Boundary
- Scour protection
- Sediment Basin Area
- Design Minor Contours
- 609.00 Design Major Contours

STAGING NOTES:

S.1. This development is to be constructed in a single stage.

SCALE BARS

0 1 2m — 1:50(A1) 1:100(A3)

0 25 50 75 100m — 1:2500(A1) 1:5000(A3)

ISSUE	DESCRIPTION	DATE	DWN	DES	CHK	APP
A	FOR INFORMATION	10/11/23	MJS		JEG	

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11574 CARNARVON HIGHWAY
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LOT 3 ON MGL20
QLD 4488

TITLE
DIRTY WATER CHANNEL LAYOUT PLAN AND CROSS SECTION

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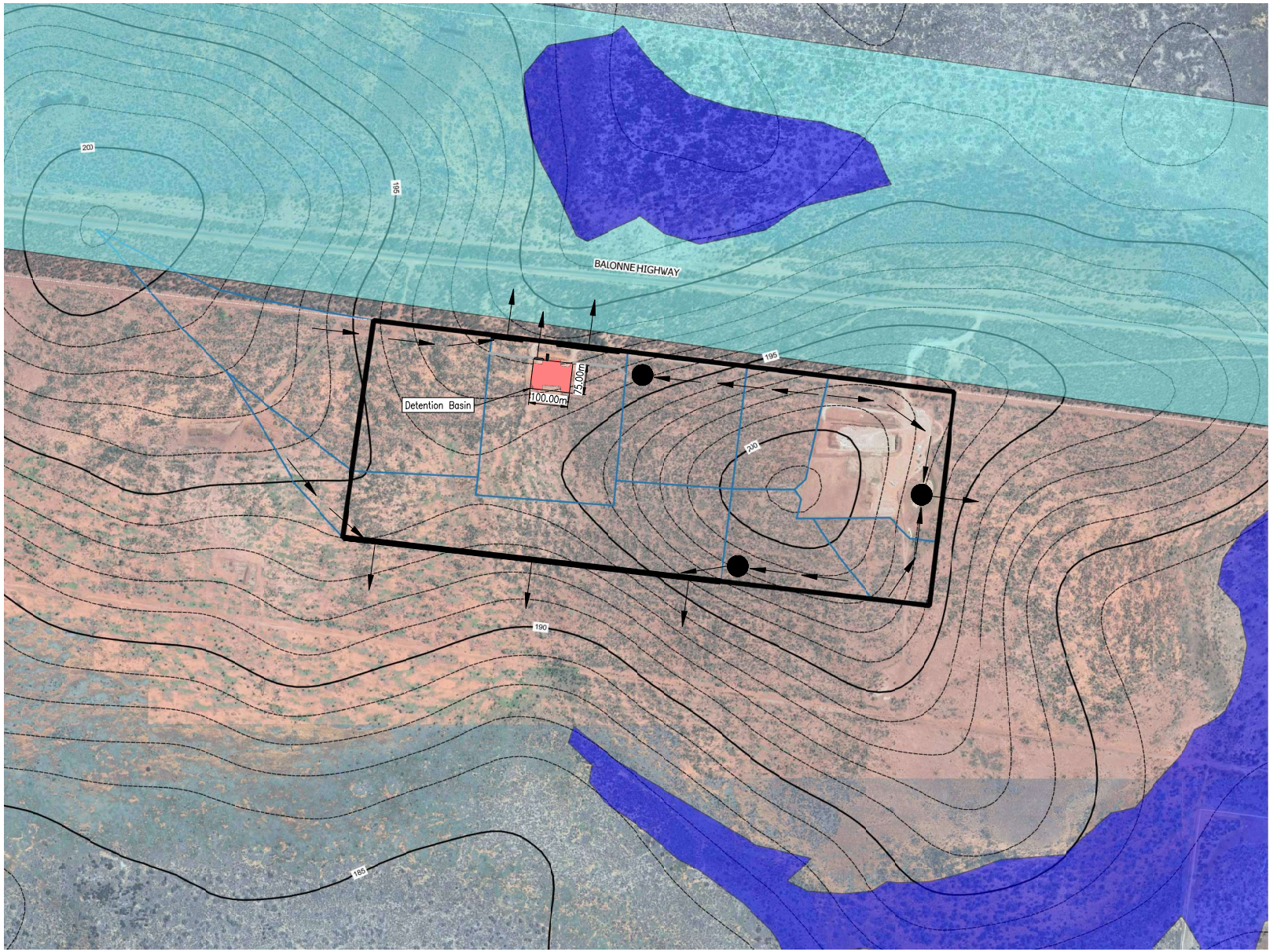
HEIGHT DATUM	MAP GRID	SIZE
AHD	MGA-55	A1

COUNCIL RAL/MCU NO.

COUNCIL OW NO.

PROJECT NO.	DRAWING NO.	ISSUE
23E-0154	C-C0202	A

Appendix F Detention Basin Design



LEGEND:

- Existing Property Boundary
- Existing Easement Boundary
- Design Minor Contours
- 609.00 Design Major Contours
- Indicative Sediment Basin Location
- Flow Path
- Bund Wall
- Detention Basin Extent

PLAN NOTES:

P.1. This is a sketch plan only and is conceptual only.

P.2. This sketch plan represents design intent and concepts only.

P.3. This plan shall not be used for tendering, financing, ordering of materials, construction or any other unintended purpose.

P.4. Information shown on these plans has been compiled from varying sources and may not be accurate and will need verifying. This includes existing infrastructure, property boundaries and natural surface data.

P.5. This plan shall not be relied upon for detailed design.

DETENTION BASIN LAYOUT PLAN

Scale 1:5000 (A1)

SCALE BARS

0 50 100 150 200m

1:5000(A1) 1:10000(A3)

ISSUE	DESCRIPTION	DATE	DWN	DES	CHK	APP
0	FOR INFORMATION	14/02/24	MJS		JEG	

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PROJECT
ROCKVILLE QUARRY | BOLLON
LOT 3 ON MGL20
QLD 4488

TITLE
DETENTION BASIN LAYOUT PLAN

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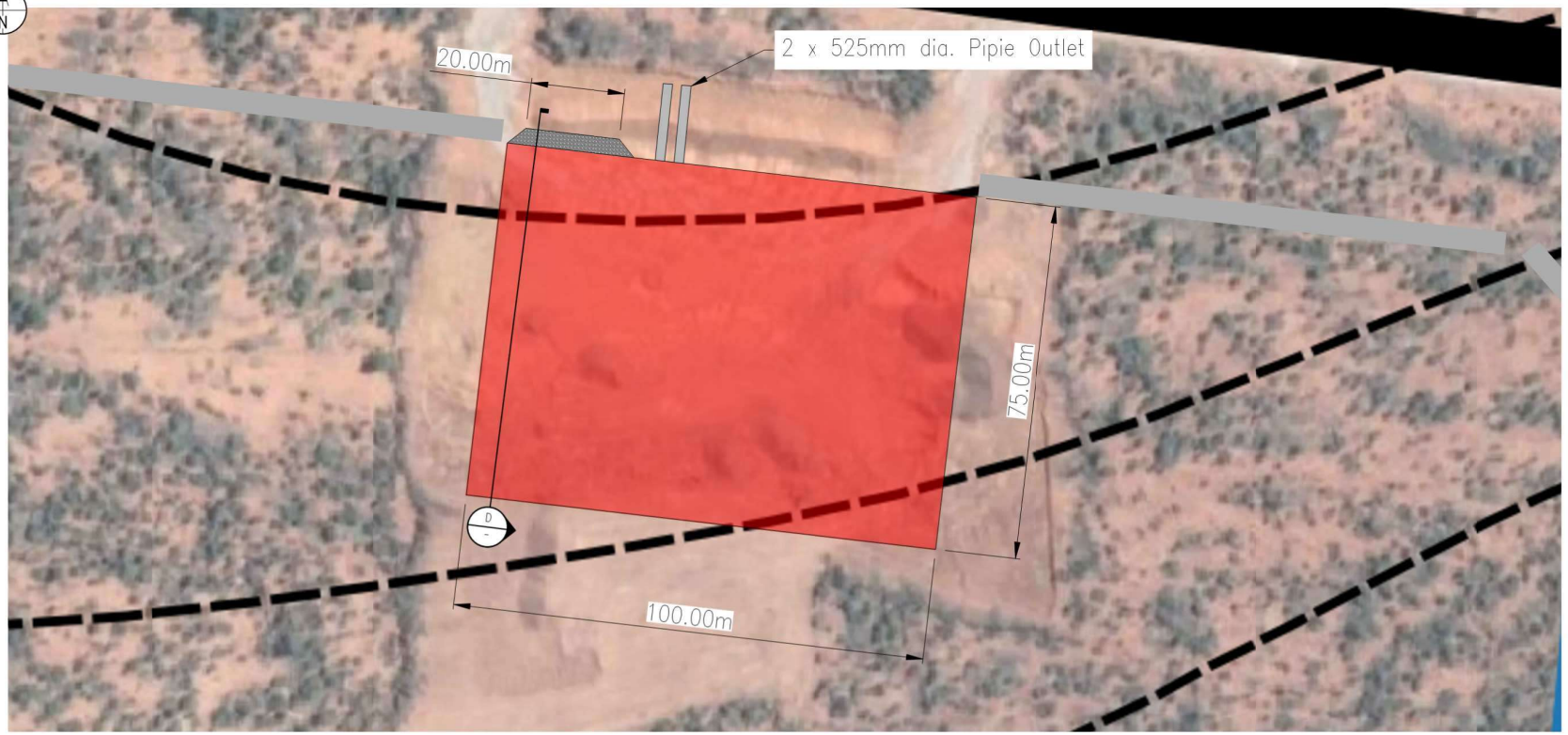
HEIGHT DATUM	MAP GRID	SIZE
AHD	MGA-55	A1

COUNCIL RAL/MCU NO.

COUNCIL OW NO.

PROJECT NO.	DRAWING NO.	ISSUE
23e-0152	C-C0203	0

N:\Synergy\Projects\23E-0152 TIA - Rockville Quarry\4 Design\Surface Water\Basin & Channel Design\C-SK0001 Detention Basin Markup.dwg



LEGEND:

- Existing Property Boundary
- Existing Easement Boundary
- Design Minor Contours
- 609.00 Design Major Contours
- Indicative Sediment Basin Location
- Flow Path
- Bund Wall
- Detention Basin Extent

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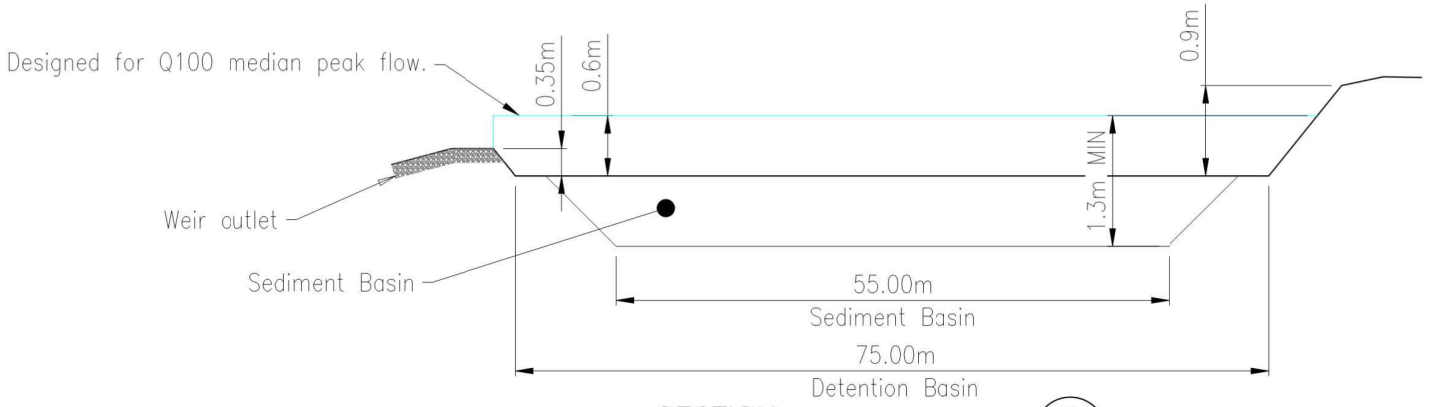

SECTION
NOT TO SCALE
D

DETENTION BASIN SECTION PLAN

Scale 1:500 (A1)

SCALE BARS
0 5 10 15 20m
1:500(A1) 1:1000(A3)

ISSUE	DESCRIPTION	DATE	DWN	DES	CHK	APP
0	FOR INFORMATION	14/02/24	MJS		JEG	

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LOT 3 ON MGL20
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HEIGHT DATUM	MAP GRID	SIZE
AHD	MGA-55	A1

COUNCIL RAL/MCU NO.

COUNCIL OW NO.

PROJECT NO.	DRAWING NO.	ISSUE
23e-0152	C-C0204	0

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APPENDIX H – TRAFFIC IMPACT ASSESSMENT

RMA Engineers

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TRAFFIC IMPACT ASSESSMENT

Rockville Quarry | Bollon

Traffic Engineering Report

Client Tierney Crushing and Transport Pty Ltd

Project Number 23E-0152

REPORT CONTROL SHEET

Report Details	
Report Title:	Traffic Impact Assessment – Rockville Quarry | Bollon
Project No.:	23E-0152
Site:	3MLG20 | Balonne Shire

Document Control					
Revision	**Author**	**Reviewer**	**Approved for Issue**		
			Name	**Signature**	**Date**
1	M Silva / D Delac	A Gwatking	A Gwatking	NER, CPEng, RPEQ: 15158	2 February 2024
2	M Silva / D Delac	A Gwatking	A Gwatking	NER, CPEng, RPEQ: 15158	12 February 2024
3	M Silva / D Delac	A Gwatking	A Gwatking	NER, CPEng, RPEQ: 15158	26 July 2024

Disclaimer:

RMA Engineers has undertaken this report based on accepted traffic engineering practices, standards, and information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects. RMA Engineers do not accept any responsibility for the authentication of accuracy of supplied information or validation of data that is outside the scope of works. RMA Engineers are not accountable for any changes to the standards, physical infrastructure conditions or planning impacts that occur after the completion date of the assessment.

The conclusions in this report should not be read in isolation. We recommend that its contents be reviewed in person with the author so that the assumptions and available information can be discussed in detail to enable the reader to make their own risk assessment in conjunction with information from other sources.

The document is produced by RMA Engineers for the sole benefit and use by the client in accordance with the contracted terms. RMA Engineers does not assume responsibility or liability to any third party arising from any use or reliance on the content of this document.

Contents

1. Introduction

RMA Engineers has been engaged by Tierney Crushing and Transport Pty Ltd to undertake a Traffic Impact Assessment (TIA) in support of a development application for the proposed use of a quarry (gravel pit) for extraction of hard rock. The 4,854ha site is formally identified as Lot 3 on MGL20 within the Balonne Shire Council (BSC) area and is named Rockville Quarry. The quarry is situated approximately 23km and 136km west of the Bollon and St George townships, respectively.

This Traffic Impact Assessment has been undertaken in general accordance with the road transport related requirements identified in the Department of Transport and Main Roads (DTMR) *Guide to Traffic Impact Assessment* (GTIA) (2018).

1.1 Report objectives and scope

The purpose of this Traffic Impact Assessment (TIA) is to document an investigation of traffic and transport impacts of the proposed development on the surrounding road network. The assessment considers the following:

- Estimation of traffic generated by the development and distribution on the surrounding road network.
- Review of potential operational impacts at the site access and key external intersections.
- Review of pavement impacts on the road network.
- Safety considerations, such as turn warrants, sight distance assessments, and a review of historical crash data.

Where required, this report makes recommendations for the mitigation of development impacts.

1.2 Reference material

In preparing this report, reference has been made to the following:

- *Guide to Road Design - Part 4a: Signalised and Unsignalised Intersections* (Austroads, 2021)
- *Guide to Traffic Impact Assessment* (Department of Transport and Main Roads, 2018)
- *Road Planning and Design Manual (RPDM) (2nd Edition)* (Department of Transport and Main Roads, 2021)
- *Balonne Shire Council Planning Scheme* (2019)

2. Proposed development

2.1 Location and descriptions

The proposed quarry is located approximately 23km west of Bollon, approximately midway between Cunnamulla and St George along the Balonne Highway. The site is formally identified as Lot 3 on MGL20 within the Balonne Shire Council (BSC) area. This parcel of land is bisected by the Balonne Highway. The subject quarry site itself is located on the southern side of the Balonne Highway.

The subject site and the immediate surroundings are classified as being of rural land uses as per the BSC Planning Scheme.

The site and its environs are illustrated on the locality plan in Figure 2-1.

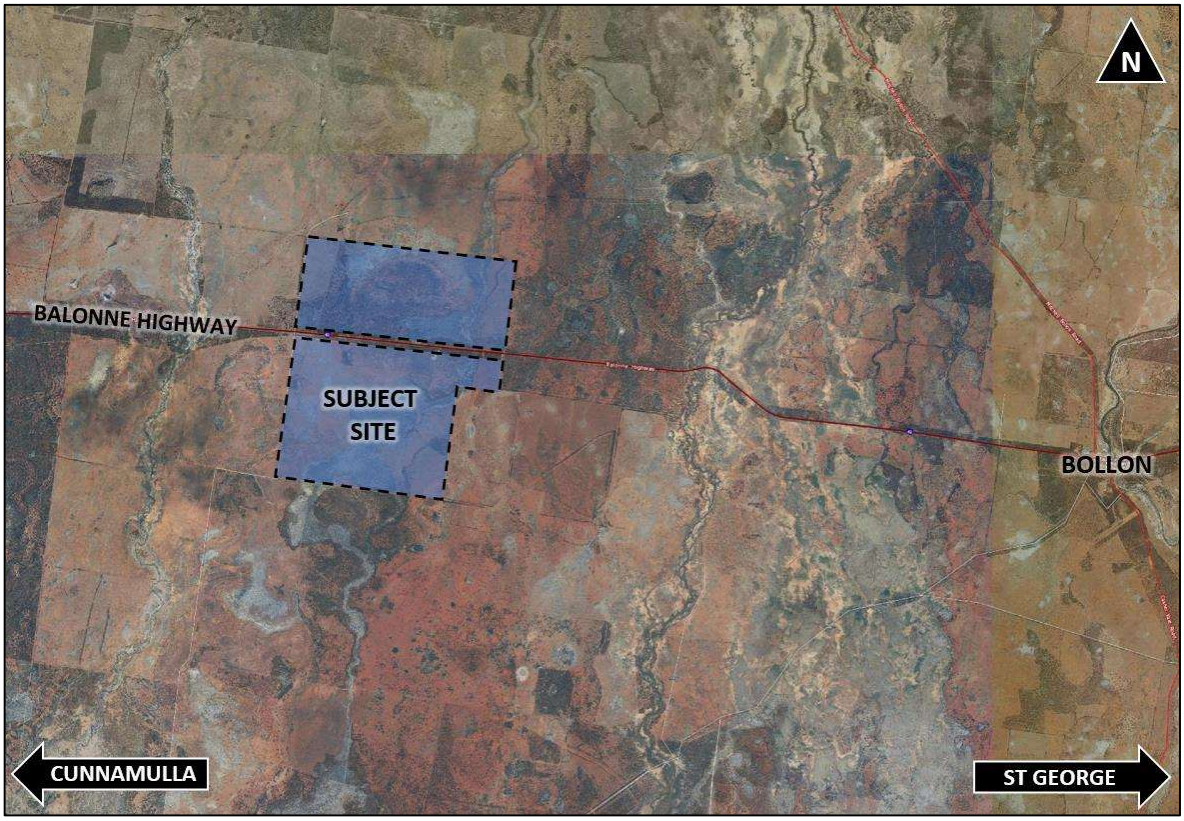


Figure 2-1 Locality plan

The proposed quarry intends to utilise an existing access located approximately 2.1km from the site's eastern property boundary. It is anticipated that the access will continue in its existing configuration and will cater for all turning movements.

The site layout is illustrated in detail at Appendix A.

2.2 Operational details

The operation of the site includes the extraction, crushing and screening of hard rock material which is then supplied to surrounding areas. It is also transported via haulage routes further east and west, as supply for general civil works such as road maintenance and other construction projects.

The site is expected to generate haulage of approximately 1,600,000 tonnes of hard rock material over any consecutive ten year period, equating to an average extraction of 160,000 tonnes of material per annum.

It should be noted that the yearly extraction rate is subject to market conditions and road maintenance demands from the surrounding road authorities. It is expected that the average extraction rate may not be achieved in some years or could be exceeded in other years. It is expected that the maximum extraction rate in any one year will not exceed 400,000 tonnes (i.e. this is the expected capped ceiling extraction rate).

The haulage is expected to be undertaken predominantly by PBS approved truck and dog combinations (3 axle truck with 4 axle dog trailer (i.e. quad dog)) with a 36 tonne payload and triple road train (AB triple) with a 65 tonne payload. A 10%/90% split of material for haulage has been adopted between the quad dog and triple road train vehicle types respectively.

The initial year of extraction is expected to be 2024 (i.e. as soon as development approval is gained).

It is assumed that the site will operate seven days per week over the year (50 weeks), with three staff members on site. The employees will remain on-site during the extraction and processing activities.

Table 2-1 illustrates the number of vehicle trips (both loaded and unloaded trips) for the operation.

Table 2-1: Anticipated development haulage demand

Haulage (tonnes per year)	PBS Truck and dog (quad dog) vehicle trips		Triple road train (type 1) (AB triple) vehicle trips	
	Annual demand	Daily demand	Annual demand	Daily demand
160,000 (average rate)	444	2	2,215	7

From the above, the development haulage demand (for 160,000 tonnes of material per annum) is approximately nine heavy vehicles (nine unloaded trips in and nine loaded trips out = 18 trips total) per day, conservatively equating to one vehicle (in and out) per hour. This development demand is considered to be low and negligible with respect to the peak hour network operations.

2.2.1 Times of operation

The site is seeking approval for the following:

- Extraction, quarrying and screening activities and internal haulage shall be limited to 5:30am to 10:00pm, Monday to Sunday (excluding public holidays).
- Drilling activities shall be limited to 7:00am to 6:00pm, Monday to Sunday.
- Blasting operations will be limited to 9:00am and 3:00pm, Monday to Friday and between 9:00am and 1:00pm on Saturdays.
- Haulage trucks will be able to access the site from 5:00am to 10:00pm, Monday to Sunday (excluding public holidays).
- Servicing of plant/equipment permitted 24/7.

3. Existing transport environment

The principal traffic route providing access to the subject site is via the Balonne Highway State Route 49 (Section 36B).

The key road and intersection are discussed further in the following sections.

3.1 Key roads

3.1.1 Balonne Highway

The Balonne Highway (36B) is a state-controlled road (SCR) under the jurisdiction of the Department of Transport and Main Roads (DTMR). This section of the highway runs predominantly east-west and extends from Bollon in the east to Cunnamulla in the west.

In the vicinity of the site, the Balonne Highway has the following characteristics (refer to Figure 3-1):

- Two way, two-lane undivided road configuration
- Lane widths of approximately 3.0m
- No sealed shoulders along both sides
- Relatively flat topography with traversable verges
- 100km/h posted speed limit
- Daily traffic volumes of approximately 150 vehicles per day (DTMR AADT 2021 data).

Figure 3-1: Balonne Highway looking east in the vicinity of the subject site

3.2 Key intersection

The key intersection for the proposed development consists of the existing Balonne Highway/Site Access intersection. The site access intersection is a priority controlled, simple T-configuration with no formal delineation or signage.

The configuration of the key intersection is illustrated in Figure 3-2.

Figure 3-2: Balonne Highway/Site Access intersection

3.3 Crash data

Historical DTMR crash data was reviewed for the previous available 10 years from 1 January 2012 to 31 December 2021 for the Balonne Highway (2km either side of the site access) and in the vicinity of the Balonne Highway/Site Access intersection. Data was obtained from Queensland Globe (transportation – road crash locations).

No crashes were recorded in the vicinity of the site during the assessment time period. Therefore, no safety issues, crash pattern or mitigation measures could be determined from the crash data review.

4. Future road network planning

4.1 Local Government planning

The BSC Planning Scheme indicates that there are no planned upgrades in the vicinity of the subject site.

4.2 State Government planning

The Queensland Transport and Roads Investment Program (QTRIP) and State Infrastructure Plan (DILGP) indicate that there are no planned upgrades in the vicinity of the subject site.

5. Traffic operation

5.1 Existing traffic volumes

Traffic data was obtained to assess the impact of the development on the external road network.

In the absence of intersection turning volume data, midblock traffic volumes were utilised as a guide for adopting turning movements at the site access. Midblock traffic count data was obtained as follows:

- DTMR midblock traffic counts – Balonne Highway (3km west of Bollon) – Site ID 50418

The count data is detailed further in the relevant sections below.

5.1.1 Balonne Highway background traffic volumes

Midblock traffic count data was obtained from DTMR for the Balonne Highway (36B). The most recent average annual average daily traffic (AADT) volumes at the count site are summarised in Table 5-1.

Table 5-1: Balonne Highway site ID 50418 background traffic volumes

Year		AADT (vehicles)
2021		150
2020		116
2019		123
2018		124
2017		102
2016		145
2015		142
2014		170
2013		139
2012		165
2011		164
Growth (%)	**5yr (most recent)**	**5.49%**
	10yr (most recent)	**0.32%**

It is noted that traffic volumes on the highway are low, and changes in absolute volume are minor.

Based on the data, a 5.5% compound per annum background traffic growth rate has been adopted for traffic impact assessment (opening year assessment as per the GTIA), and 0.5% for the pavement assessment (20-year assessment).

The average proportion of heavy vehicles using Balonne Highway at this location in 2021 was 18.5%.

Table 5-2 summarises peak hour traffic volumes at the Balonne Highway count site.

Table 5-2: Balonne Highway peak hour background traffic volumes

Year	Peak hour	Hourly volume (vehicles)
2021	Am (10am-11am)	11
	Pm (2pm-3pm / 3pm-4pm)	10

The received traffic count data is included in Appendix B.

5.2 Development traffic volumes

From the operational details (refer to Section 2.2), the development haulage demand (considering an average of 160,000 tonnes of material per annum) is approximately nine heavy vehicles (in and out trips) per day, equating to one vehicle (in and out) per hour.

Based on client advice, the following development traffic distribution has been adopted:

- 90% development traffic to/from east (Bollon, St George and beyond)
- 10% development traffic to/from the west (Cunnamulla and beyond)

The distribution of the material depends on the location of project sites and are subject to market conditions. The distribution is based on previous operational trends and potential new project locations. It is expected that traffic associated with the development will disperse per existing traffic patterns outside of the scope area.

From the above, the development hourly traffic volumes at the site access are illustrated in Figure 5-1, with volumes rounded up to the nearest whole number.

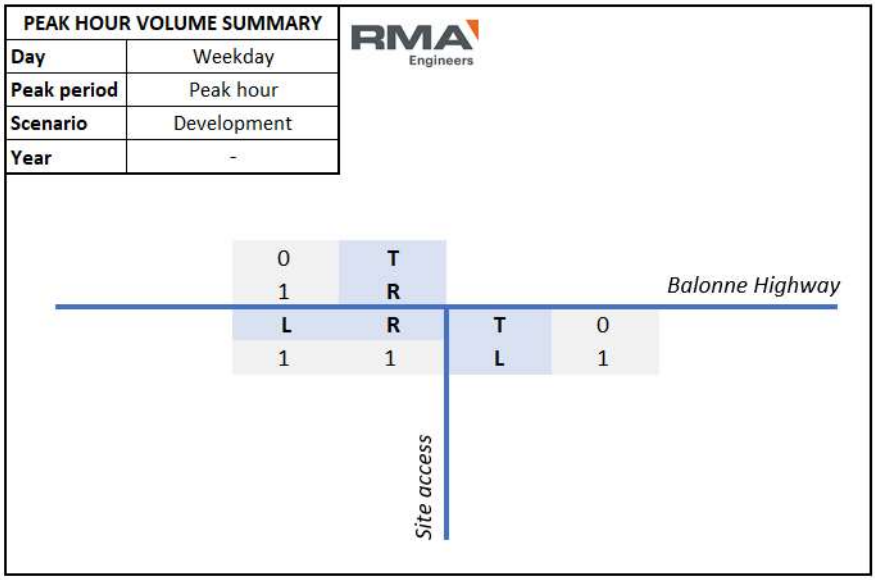


Figure 5-1: Balonne Highway/Site Access intersection – Development traffic volumes (hourly)

The development and background peak hour volumes at the opening year (2024) is shown in Figure 5-3. This is considered conservative as it assumes both the development peak and the background traffic network peak periods align. Note that the background peak period (worst case) is 10-11am.

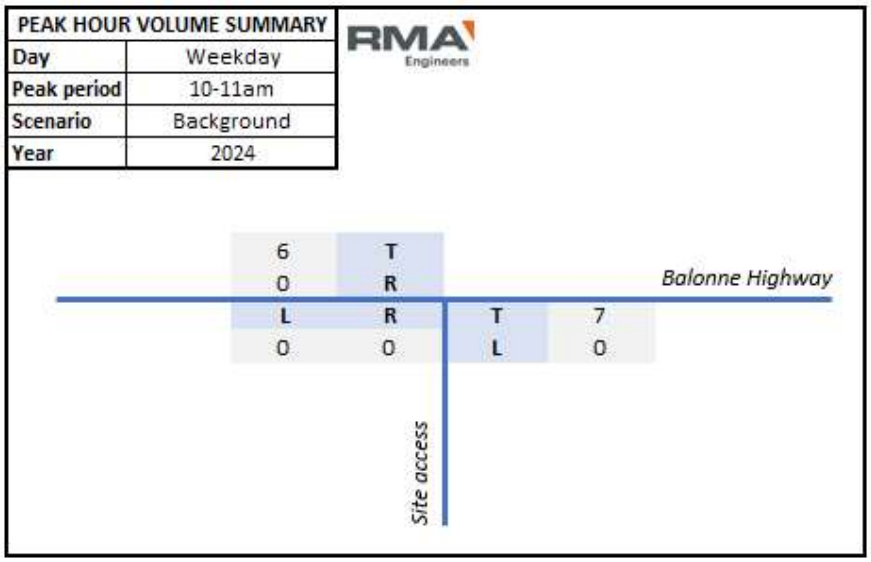


Figure 5-2: Balonne Highway/Site Access intersection – 2024 background traffic volumes (hourly)

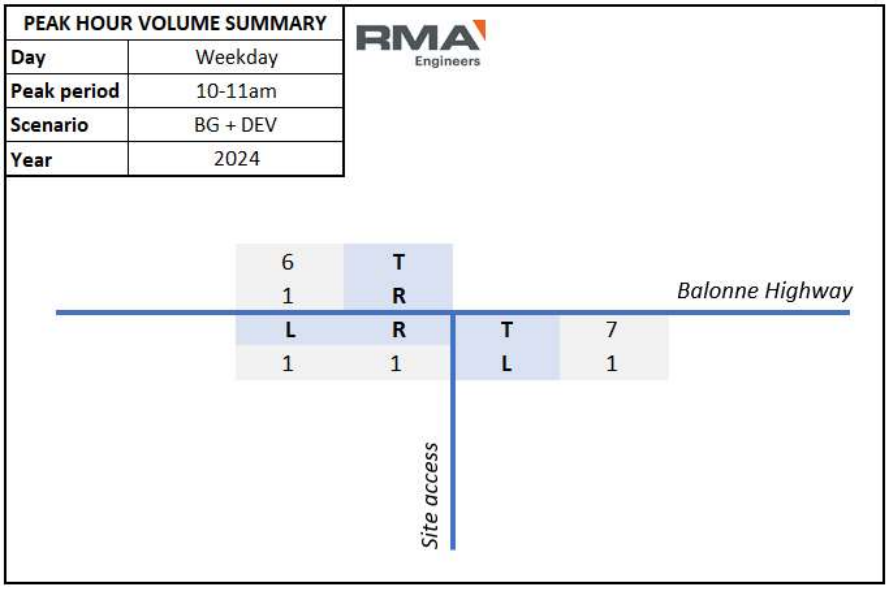


Figure 5-3: Balonne Highway/Site Access intersection – 2024 background and development traffic volumes (hourly)

6. Development traffic impact on external road network

6.1 Intersection operation

The DTMR *Road Planning and Design Manual* Chapter 13.5.4 provides information relating to the maximum traffic volume combinations for uninterrupted traffic flow conditions. These combinations are shown in Table 6-1 below and provides guidance for unsignalised intersections carrying light crossing and turning volumes. Where the volumes are less than that illustrated in Table 6-1, it is considered unnecessary to flare intersection approaches or carry out intersection operational analysis.

Table 6-1: Intersection capacity – uninterrupted flow conditions

Major road type[1]	Major road flow (vph)[2]	Minor road flow (vph)[2]
Two-lane	400	250
	500	200
	650	100

1. *Major road is through i.e. has priority*
2. *Major road design volumes include through and turning movements*
3. *Minor road design volumes include through and turning volumes*

The anticipated 2024 background with development hourly traffic volumes illustrated in Figure 5-3 do not exceed the hourly volume combinations shown in Table 6-1. Therefore, intersection analysis is not deemed warranted for the key intersection of Balonne Highway/Site Access. It is expected that this intersection will operate well under practical capacity with the proposed development volumes.

7. Pavement impact assessment

7.1 GTIA method consideration

Pavement impacts were initially considered through the GTIA methodology. However, given the location of the site and the minor increase in traffic, it is recognised that the GTIA methodology would result in unreasonable annual maintenance cost outcomes that would make the development unviable. This is because of the following:

- The site is located adjacent the Balonne Highway which has low background traffic[1]. The 5% trigger of the GTIA methodology is reached with just one extra heavy vehicle per day. Therefore, even with low volumes generated, a maintenance cost would be triggered.
- The location of the site provides long haulage routes to nearby townships (i.e. approximately 155km to Cunnamulla, and approximately 136km to St George). These long travel distances significantly increase the annual marginal maintenance costs for the haulage route.

From the above, if the GTIA methodology was used for the pavement impact of the site, the development would become unviable due to the excessive maintenance contributions required.

It is also recognised that the majority of the material being extracted is provided to the road authorities to help repair and maintain the surrounding road infrastructure, and therefore conditioning pavement impact charges could be counterintuitive.

7.2 Pavement design

The site is expected to generate very low traffic demands on the external road network, conservatively consisting of nine additional heavy vehicles per day for the worst case direction (east to/from Bollon). This is considered to have a negligible pavement impact due to the low volumes generated. It is expected that the construction of the existing road and associated maintenance activities include contingency to cater for such a minor number of additional vehicles.

To further support this, as an alternative approach, the change in pavement design requirements due to development traffic is detailed below.

For this assessment, the following assumptions have been made:

- An estimated subgrade CBR of 3.0.
- 0.5% compound per annum background traffic growth (based on 10-year AADT data) over 20 years.
- Worst-case lane/direction with loaded trucks: eastbound (against gazettal) between site and Bollon.

A comparison of the design traffic and associated minimum pavement depth with and without development traffic is summarised as follows.

[1] *The Balonne Highway is identified as a "very low volume rural road" per the DTMR RPDM – Edition 2: Volume 3, November 2023, given that the AADT (with both the background traffic and development traffic) is less than 250vpd.*

Table 7-1: Balonne Highway pavement design comparison – against gazettal east of site access

Road	Analysis period	Scenario	Design traffic ESAs	Estimated minimum pavement depth (mm)
Balonne Highway	20 years	Background	860,767	507.14mm
		Background with development	1,287,412	530.14mm

The change in estimated minimum pavement depth due to the development traffic is approximately 23mm which represents a 4.3% increase in pavement depth. This in the vicinity of the construction tolerance (i.e. ~20mm) and is not considered to be significant.

Therefore, from the above, the development is expected to have a negligible pavement impact on the surrounding road network, and no action is required for external pavement upgrades or maintenance contributions for the development.

8. Safety considerations

8.1 Turn warrant assessment

Turn warrants are used to identify the need to provide separate turning provisions from a functionality and safety perspective. The warrants are essentially the relationship between the turning volumes versus the major road traffic volumes.

Table 8-1 summarises the turn warrant treatments required at the site access intersection using a design speed of 110km/h. This assessment uses the peak hour volumes shown in Section 5. The turn warrant graphs are illustrated at Appendix C.

It should be noted that this key intersection is an access driveway and is existing in the current location. Therefore, both the Normal Design Domain (NDD) and the Extended Design Domain (EDD) turn warrants have been considered.

Table 8-1: Turn warrant summary – Balonne Highway/Site access intersection

Scenario	Scenario	Right turn treatment triggered*	Left turn treatment triggered*
Background with development (NDD)	2024	BAR	BAL
	2034	BAR	BAL
Background with development (EDD)	2034	SR	SL

BAL = Basic left turn treatment, BAR = Basic right turn treatment, SL = Simple left turn treatment, SR = Simple right turn treatment

From the turn warrant assessment, the access does not trigger any upgrades from its existing SL and SR formation, and channelisation is not required. This is deemed appropriate given the access function of the intersection, the rural nature of the site and the low volumes of the adjacent highway.

8.2 Sight distance assessment

A desktop sight distance assessment has been undertaken for the site access location. Table 8-2 summarises the variables used for this calculation.

Table 8-2: Variables adopted for sight distance assessment

Variable symbol	Description	Value adopted for assessment		Unit of measure
		Truck	Car	
DT	Decision time (s) = observation time (3 s) + reaction time (s)	5.5	5.5	seconds
V	Operating (85th percentile) speed	110	110	km/h
d	Coefficient of deceleration for cars / trucks *(Guide to Road Design – Part 3: Geometric Design (Austroads 2016))*	0.29	0.36	
a	Longitudinal grade in % (in direction of travel: positive for uphill grade, negative for downhill grade)	0		%
R_T	perception/reaction time *(Guide to Road Design – Part 3: Geometric Design (Austroads 2016))*	2.5	2.5	seconds
SISD	$SISD = \frac{D_T \times V}{3.6} + \frac{V^2}{254 \times (d + 0.01 \times a)}$ (Equation 2 *Guide to Road Design - Part 4a*)			

8.2.1 Balonne Highway/Site Access intersection sight distance review

The applicable sight distance at the Balonne Highway/Site Access intersection is summarised in Table 8-3 and illustrated in Figure 8-1 and Figure 8-2.

Table 8-3: Balonne Highway/Site Access SISD review summary

Vehicle	Direction	Required SISD (m)	Actual sight distance (m)	Compliance
Car	Eastbound	300	>400	Compliant
	Westbound		>400	Compliant
Truck	Eastbound	332	>400	Compliant
	Westbound		>400	Compliant

Figure 8-1: Looking west along Balonne Highway adjacent to the site access

Figure 8-2: Looking east along Balonne Highway adjacent to the site access

The sight distance along the Balonne Highway was found to be adequate for the site access location. The surrounding area has relatively flat topology and vegetation setback from the edge of the highway. Therefore, no sight distance issues are identified.

8.3 Intersection suitability

The key site access intersection has been reviewed in regard to safety and formation. The outcomes of the review are detailed in the relevant sections below.

8.3.1 Balonne Highway/Site Access intersection

The Balonne Highway/Site Access intersection is a priority controlled T-intersection. It is identified in previous sections of this report that this access does not trigger any turn warrant upgrades, and sight distance appears to be adequate.

However, a number of delicences have been identified at this intersection regarding advanced warning and delineation.

Signage

No warning signs exist on the Balonne Highway approaches to the site access. It is recommended that the developer consider installing 'trucks turning' warning signage (W5-205).

Delineation

It is recommended to install road edge guide posts at the turn outs to the access, to increase the delineation of the access intersection.

Geometry

Swept path assessment has been undertaken for the site access intersection to determine if the geometry is adequate for larger vehicles. As per the DTMR RPDM Chapter 5, the assessment was undertaken using an A-Double (36.5m long Type 1 Road Train) design vehicle to represent the largest design vehicle (AB triple). This is because the swept path performance of multi-combination vehicles (e.g. AB triple) is improved compared to the equivalent length road trains, due to the extra points of articulation and more uniform component wheelbases.

It is noted that, given the relatively low truck turning volumes expected at this intersection, it is unlikely for two trucks to turn at the intersection at the same time.

The swept path assessment has been undertaken using aerial imagery and any upgrades should be subject to further detailed intersection design in future development stages (if required).

The vehicle profile is shown in Figure 8-3.

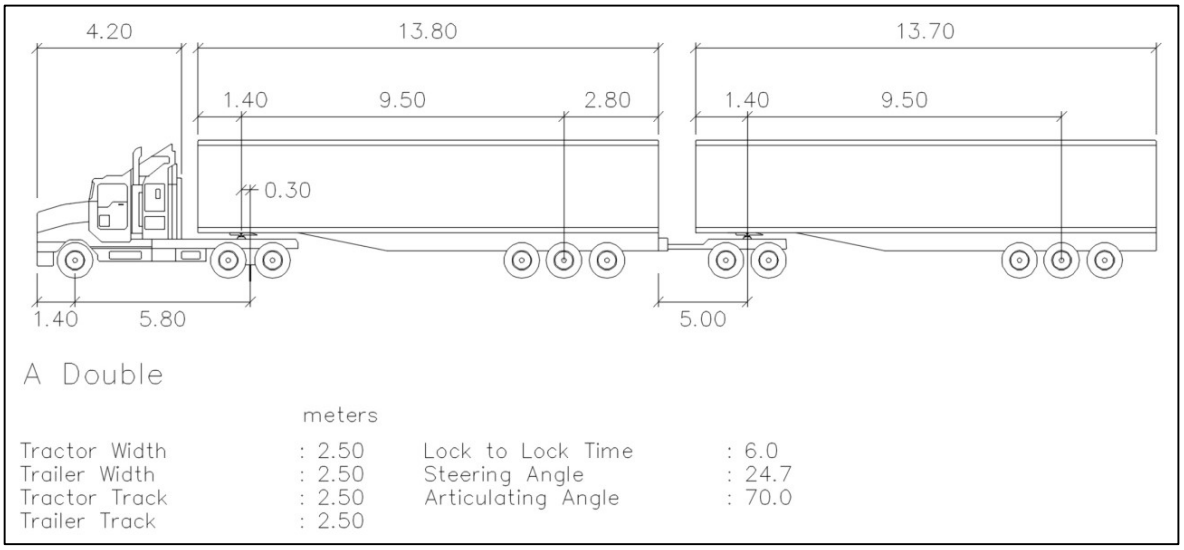


Figure 8-3: A-Double vehicle profile

The swept paths are shown in the following figures. They indicate that the design vehicle is able to turn in and out of the site within the existing unsealed access road width and highway pavement.

Figure 8-4: Balonne Highway to Site Access – right turn in

Figure 8-5: Balonne Highway to Site Access – left turn in

Figure 8-6: Site Access to Balonne Highway – left turn out

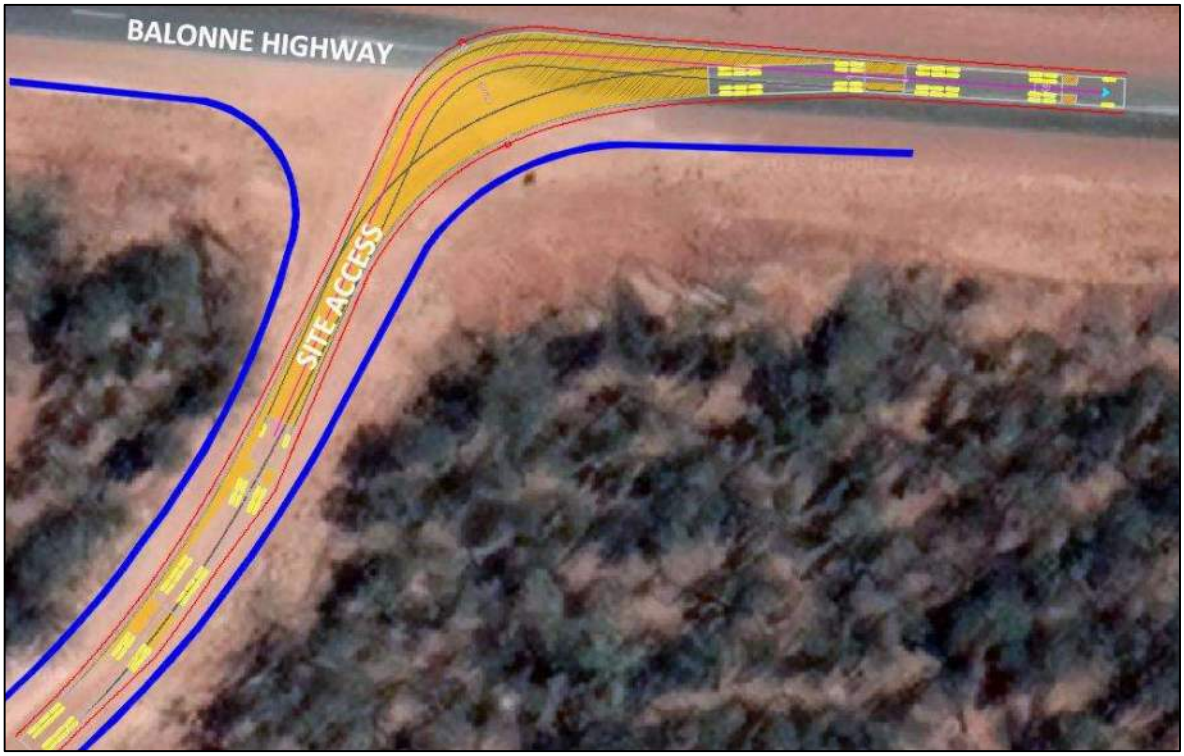
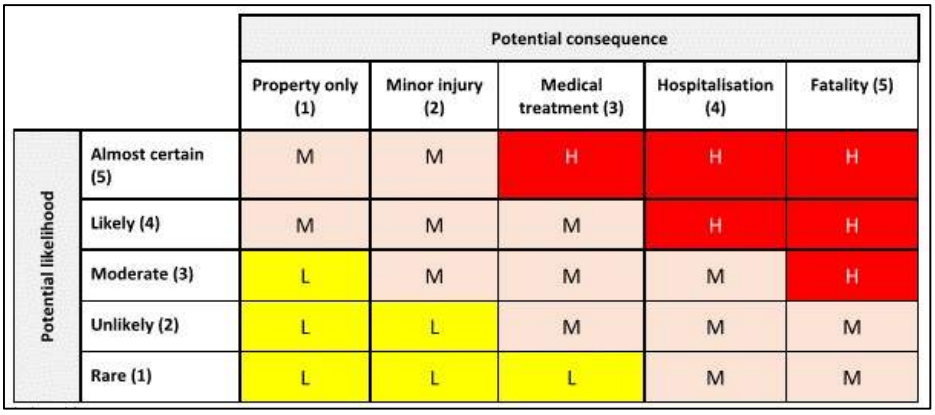


Figure 8-7: Site Access to Balonne Highway – right turn out

8.4 Risk assessment

A risk assessment examining the increase in turning movements at the site access intersection have been considered as per the GTIA process. The safety risk score matrix is shown in Figure 8-8.



Potential likelihood	Potential consequence				
	Property only (1)	Minor injury (2)	Medical treatment (3)	Hospitalisation (4)	Fatality (5)
Almost certain (5)	M	M	H	H	H
Likely (4)	M	M	M	H	H
Moderate (3)	L	M	M	M	H
Unlikely (2)	L	L	M	M	M
Rare (1)	L	L	L	M	M

Figure 8-8: Safety risk score matrix (GTIA)

The risk items examined consider the potential to increase crashes and the safety deficiencies on the road network. Table 8-4 summarises the risks associated with the proposed development as identified in the preceding sections.

Table 8-4: Road safety risk summary

Risk item	Without development			With development			With development and mitigation			
	Likelihood	Consequence	Risk score	Likelihood	Consequence	Risk score	Mitigation measures	Likelihood	Consequence	Risk score
Risk of angle or rear end crash due to increase in traffic and turning movements at the site access intersection.	1	4	M	1	4	M	**Developer to install truck warning signage.** No crashes have been recorded at the site access and sight lines are considered sufficient. Background traffic volumes are low. Install 'trucks turning' warning signage (W5-205) on approaches to site access to increase awareness for motorists.	1	4	M
Risk of head-on and off-road crashes due to narrow 3.0m lane widths on the Ballone Highway.	2	5	M	2	5	M	**No action required by the developer.** DTMR to consider widening the road pavement for the full highway corridor with respect to relevant intervention levels and benefit to cost investigations.	1	5	M
Risk of angle or rear end crash due to increase in traffic and turning movements at the site access intersection.	1	4	M	1	4	M	**No action required by the developer.** Current SR and SL are considered satisfactory as per the turn warrant assessment outcomes.	1	4	M
Risk of angle or rear end crash due to lack of delineation at the site access intersection.	1	4	M	1	4	M	**Developer to install road edge guideposts at the turnouts of the access.** This will help improve the delineation of the access.	1	4	M

As shown, there is no change in the risk score due to the addition of development traffic, and no high risks are identified.

From the above, no adverse safety issues were identified relating to the proposed development.

9. Site layout review

9.1 Site access review

The existing access is proposed to be utilised for all vehicle movements into and out of the development site.

Vehicle swept path assessment outcomes are detailed in Section 8.3 of this report. Sight distance requirements (as per SISD requirements) for the access location are considered in Section 8.2 and deemed adequate for the proposed development.

The site is expected to cater for low traffic volumes and has a long driveway that provides adequate queuing space.

9.2 Internal circulation

The site proposes unsealed gravel roads and manoeuvring areas. This is considered satisfactory for the required movements of heavy vehicles and low traffic volumes associated with the development.

9.3 Internal parking and loading areas

There is ample area and space to provide for informal staff car parking and truck loading within the site. The internal layout can be refined as necessary in future operational stages.

10. Summary and recommendations

RMA Engineers has been engaged by Tierney Crushing and Transport Pty Ltd to undertake a Traffic Impact Assessment (TIA) in support of a development application for the proposed use of a quarry (gravel pit) for extraction of hard rock. The 4,854ha site is formally identified as Lot 3 on MGL20 within the Balonne Shire Council (BSC) area and is named Rockville Quarry. The quarry is situated approximately 23km and 136km west of the Bollon and St George townships, respectively.

This Traffic Impact Assessment has been undertaken in general accordance with the road transport related requirements identified in the Department of Transport and Main Roads (DTMR) *Guide to Traffic Impact Assessment* (GTIA) (2018).

The following is a summary of the findings and recommendations of the TIA:

Operational impacts:

- The development will generate low daily traffic volumes, consisting of an average of nine heavy vehicles per day for the average extraction rate (i.e. 160,000 tonnes per year).
- The anticipated 2034 'background with development' hourly traffic volumes do not exceed the hourly volume combinations shown in Table 6-1. Therefore, intersection analysis is not deemed warranted for the key intersection of Balonne Highway/Site Access. It is expected that this intersection will operate under practical capacity with the proposed development volumes.

Pavement impacts:

- The GTIA PIA assessment methodology is not considered to be appropriate for this site, due to the very low background traffic volumes on Balonne Highway, and long haulage routes to the nearest townships.
- The site is expected to generate very low traffic demands on the external road network, conservative estimated as nine additional heavy vehicles per day for the worst case direction (east to/from Bollon). This is considered to have a negligible pavement impact due to the low volumes generated. It is expected that the construction of the existing road and associated maintenance activities would include contingency to cater for such a minor number of additional vehicles.
- An assessment of minimum pavement depth design found that the impact of development traffic is minor, with an estimated additional depth of 23mm which equates to a 4.3% increase. This is in the vicinity of the construction tolerance (i.e. ~20mm) and is not considered to be significant.
- From pavement impact considerations, it is concluded that the development is expected to have a negligible pavement impact on the surrounding road network and no action is required for external pavement upgrades or maintenance contributions for the development.

Safety considerations:

- From a historical crash data review, no crash patterns or mitigation measures could be identified within the vicinity of the site.
- From the turn warrant assessment the access does not trigger any upgrades from its existing SL and SR formation, and channelisation is not required. This is deemed appropriate given the access function of the intersection, the rural nature of the site and the low volumes of the adjacent highway.
- A desktop sight distance review for the Balonne Highway/Site Access intersection found that sight distances are adequate. The surrounding area has relatively flat topology and vegetation setback from

the edge of the highway. Therefore, no sight distance safety issues are identified.

- From a review of the site access intersection, the following items were identified:
  - It is recommended that the developer consider installing 'trucks turning' warning signage (W5-205) on the approaches to the site access.
  - It is recommended that the developer consider installing road edge guide posts at the turn outs to the access, to increase the delineation of the access intersection.
  - From a swept path assessment, it is identified that the site access intersection is suitable for the anticipated design vehicle movements.
- A review of safety risk items found no high risk safety issues or increase in risk scores relating to use of the external road network by development traffic.
- It was identified that DTMR consider widening the road pavement of the Balonne Highway to provide 3.5m lane widths and associated shoulders to help mitigate the risk of head-on and off-road crashes due to the current narrow road carriageway. This will depend on DTMR planning and intervention levels and benefit versus cost investigations for the corridor.

Internal layout considerations:

- From a high-level internal layout review, the proposed site access, internal gravel roads and circulation, and parking and loading provision are deemed satisfactory. The internal layout can be refined as necessary in future operational stages.

With respect to the above findings and recommendations of this TIA report, the proposed development can proceed without any unacceptable or adverse impacts on the external road network. No traffic and transport engineering matters have been identified that should preclude approval of the proposed development at this location.

Appendix A Proposed development plans

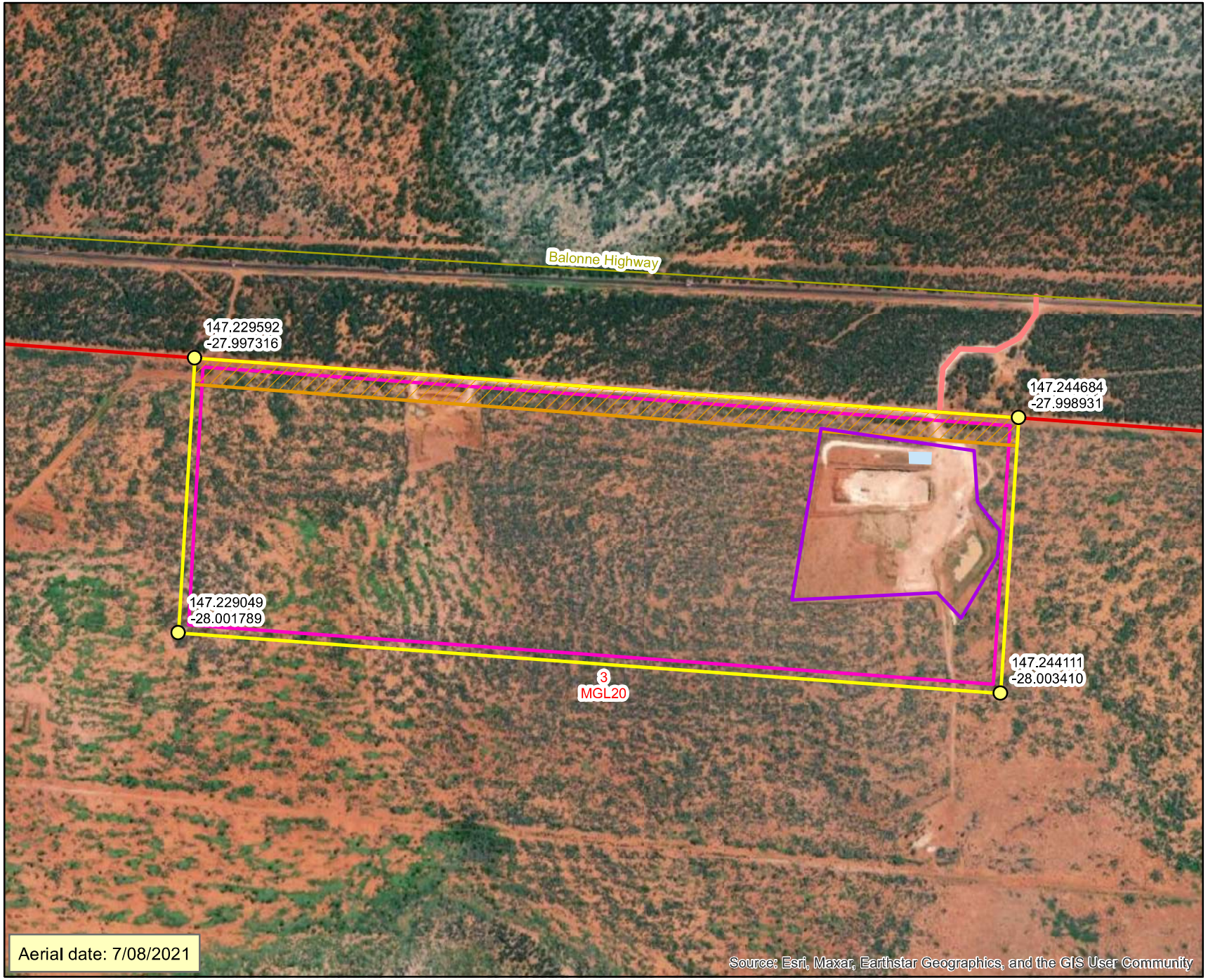


Figure 3
Total Extractive Activities Area

Project: EA Amendment

Client: Tierney Crushing and Transport Pty Ltd

Project No.: J001483

Compiled by: MJW Date: 1/12/2023
Approved by: RJM Date: 1/12/2023

Metres
0 125 250

Legend

- Cadastre
- Roads
- Site boundary
- Total Extractive Activities Area
- Existing Extractive Activities Area
- Existing Site Access
- Site office/Diesel AST
- 50m Wide Extraction Exclusion Zone
- 15m Wide Access Allowance

The content of this document includes third party data. Range Environmental Consultants does not gaurantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2023).

N

range environmental consultants

Appendix B Traffic count data

Queensland Government

Disclaimer:

Average Annual Daily Traffic Complete Report

Filters

Year: 2021 | Road Section: 36B

Average Annual Traffic & Vehicle Kilometres Travelled

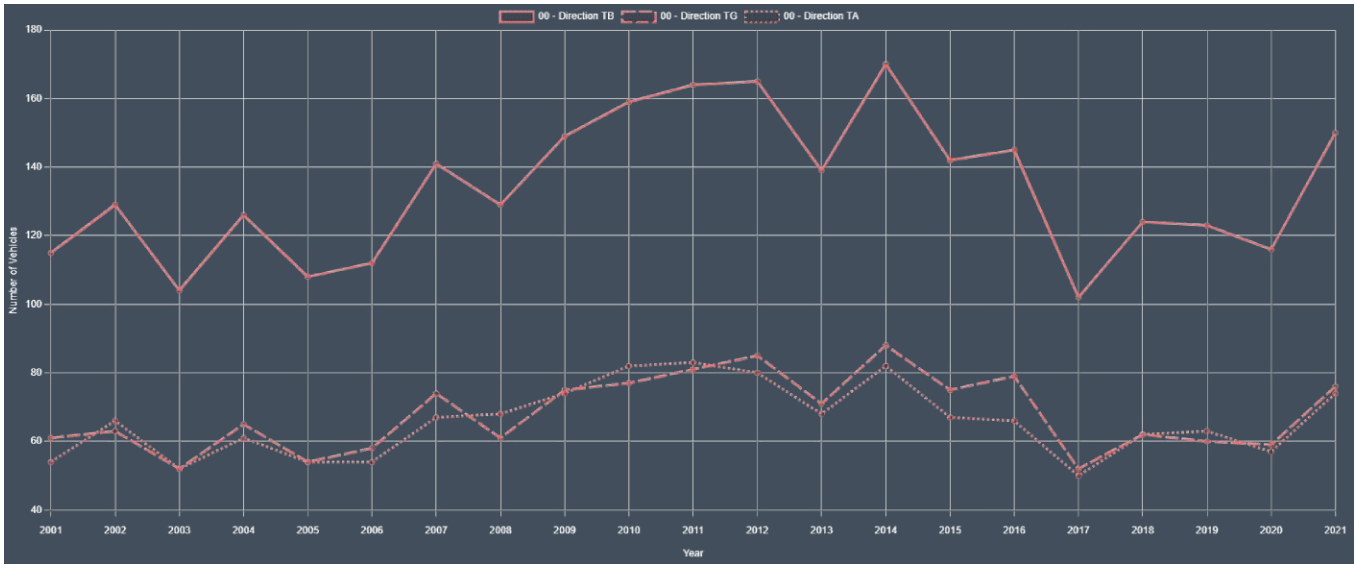
			AADT						VKT (Millions)		
			G		A		B		G	A	B
		Vehicle Classification	AADT	Class	AADT	Class	AADT	Class	VKT	VKT	VKT
☑	⊖	All vehicles	76	100%	74	100%	150	100%	1.03415	1.00693	2.04108
	⊕	Light Vehicles	62	81.53%	54	72.78%	116	77.21%	0.84365	0.73479	1.57844
	⊕	Heavy Vehicles	14	18.47%	20	27.22%	34	22.79%	0.1905	0.27214	0.46264

Average Annual Daily Traffic

Years: 2001 - 2021

Road Section: 36B, BALONNE HIGHWAY (BOLLON - CUNNAMULLA)

Site: 50418, 36B-3km West of Bollon, Through distance: 3.36



Queensland Government

Disclaimer:

AADT Site Profiles Report

Filters

36B-3km West of Bollon | Both Directions | 2021

AADT	Growth last Year	% of year with data
150	29.31% ▲	5%
Week day % of AADT	**Growth last 5 years**	
100%	5.49% ▲	
Weekend day % of AADT	**Growth last 10 years**	
100.01%	0.32% ▲	

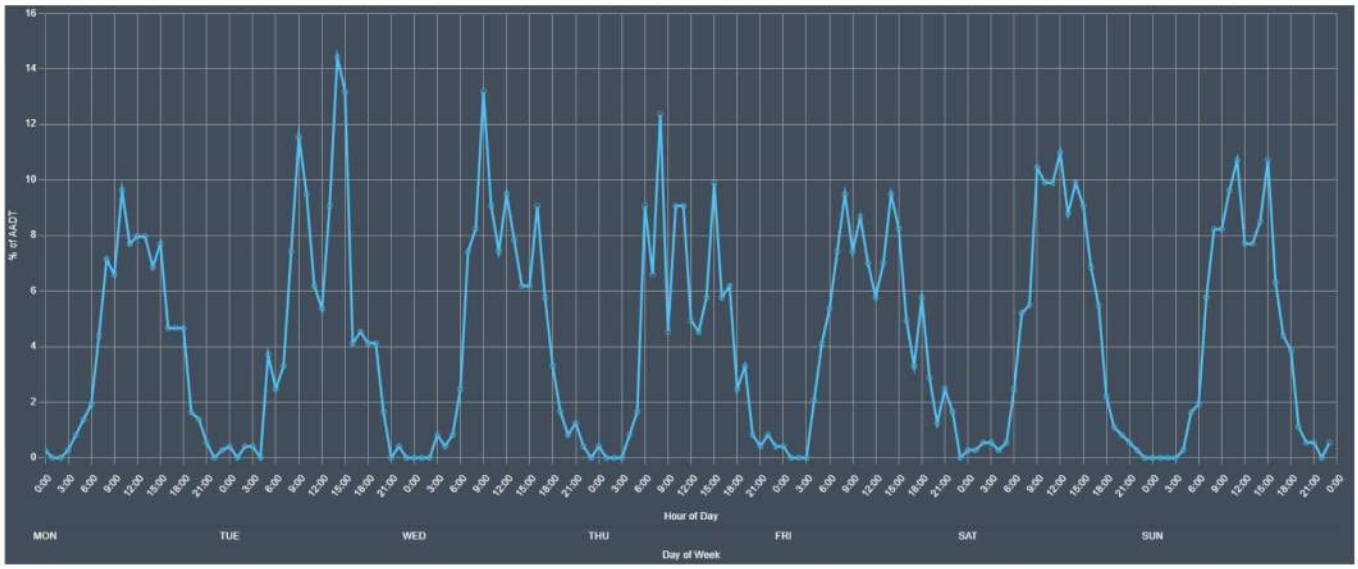
Annual Site Profile

Average Hourly Profile

Year: 2021

Road Section: 36B, BALONNE HIGHWAY (BOLLON - CUNNAMULLA)

Site: 50418, 36B-3km West of Bollon, 3.36



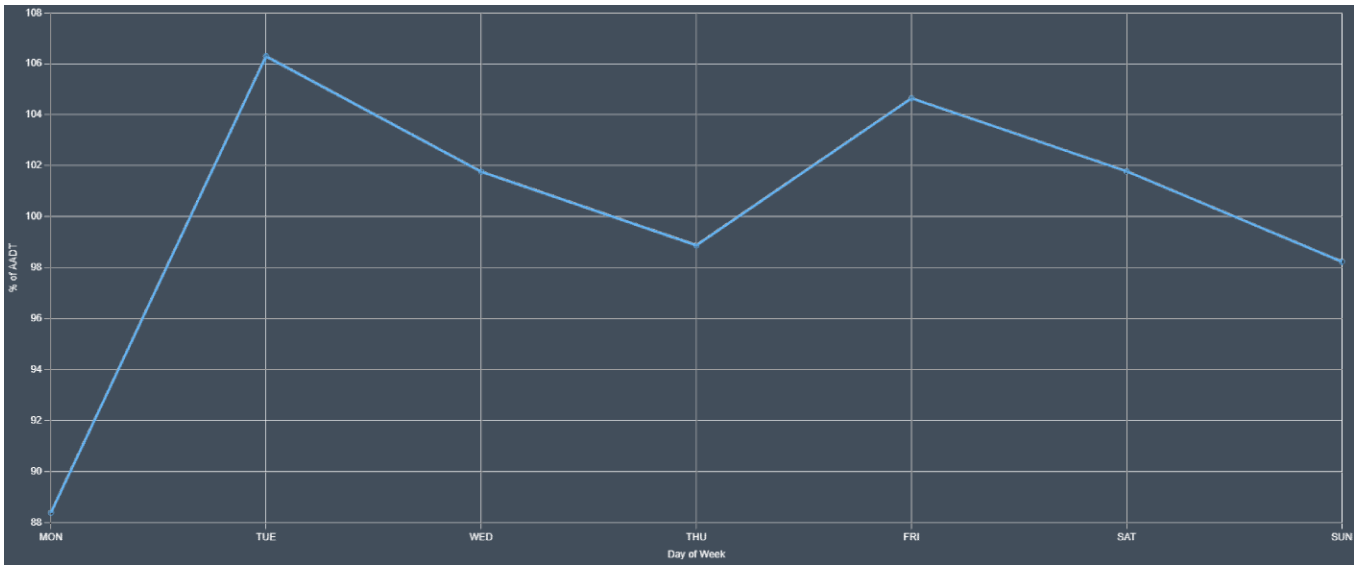
Annual Site Profile

Average Daily Profile

Year: 2021

Road Section: 36B, BALONNE HIGHWAY (BOLLON - CUNNAMULLA)

Site: 50418, 36B-3km West of Bollon, 3.36



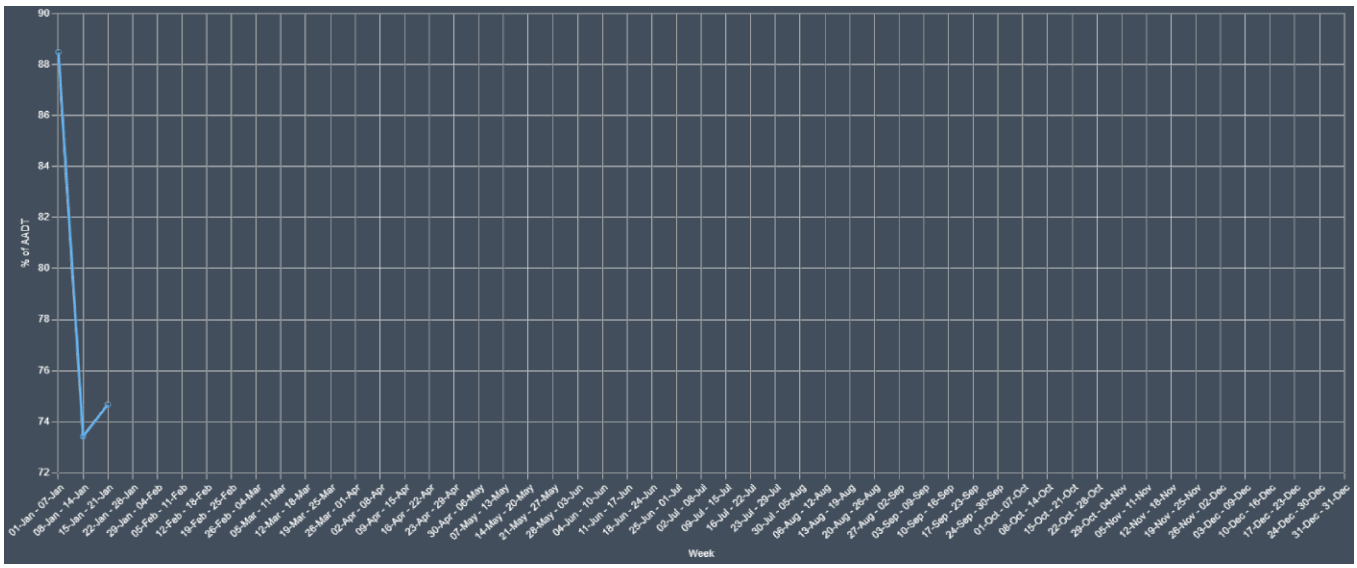
Annual Site Profile

Annual Weekly Profile

Year: 2021

Road Section: 36B, BALONNE HIGHWAY (BOLLON - CUNNAMULLA)

Site: 50418, 36B-3km West of Bollon, 3.36



Annual Site Profile

Data Availability

January, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December, 2021

MON	TUE	WED	THU	FRI	SAT	SUN
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

QLD TRAFFIC DATA AVERAGE BY HOUR BY DAY 2021 - DTMR DATASET

SITE_ID	DESCRIPTION	SITE_DISTANCE	RSECT_ID	ROAD_NAME	TDIST_START	TDIST_END	GAZETTAL_DIRECTION	HOURS	MON	TUE	WED	THU	FRI	SAT	SUN	WEEKDAY_AVERAGE	WEEKEND_AVERAGE	Weekday Avg - BiDirectional
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	0 to 1	0	1	0	1	0	0	0	0	0	**0**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	1 to 2	0	0	0	0	0	0	0	0	0	**0**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	2 to 3	0	1	0	0	0	0	0	0	0	**0**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	3 to 4	0	1	1	0	0	1	0	0	0	**0**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	4 to 5	0	0	0	1	0	0	0	0	0	**1**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	5 to 6	1	1	1	0	1	0	1	1	0	**3**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	6 to 7	0	0	1	1	2	2	1	1	1	**5**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	7 to 8	3	2	5	6	4	4	3	4	3	**7**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	8 to 9	6	6	6	7	6	4	5	6	5	**10**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	9 to 10	4	8	10	4	5	9	7	6	8	**10**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	10 to 11	6	4	5	5	5	7	5	5	6	**11**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	11 to 12	4	4	6	6	5	6	7	5	7	**10**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	12 to 13	4	3	5	3	5	6	5	4	6	**9**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	13 to 14	3	5	5	2	4	6	2	4	4	**9**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	14 to 15	2	6	3	4	7	3	3	4	3	**10**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	15 to 16	3	6	4	7	3	3	6	4	4	**10**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	16 to 17	2	3	6	3	1	2	3	3	3	**7**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	17 to 18	4	3	4	5	2	4	3	4	3	**7**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	18 to 19	3	2	2	1	3	2	2	2	2	**5**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	19 to 20	0	2	1	1	2	1	1	1	1	**3**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	20 to 21	1	1	1	1	0	0	1	1	1	**2**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	21 to 22	0	0	0	1	0	0	0	0	0	**1**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	22 to 23	0	0	1	1	1	0	0	0	0	**1**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	AGAINST GAZ	23 to 24	0	0	0	1	0	0	0	0	0	**0**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	0 to 1	0	0	0	0	0	0	0	0	0	total **121**
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	1 to 2	0	0	0	0	0	0	0	0	0	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	2 to 3	0	0	0	0	0	0	0	0	0	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	3 to 4	0	0	1	0	0	0	0	0	0	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	4 to 5	1	0	1	0	1	0	0	1	0	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	5 to 6	1	4	1	2	2	1	1	2	1	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	6 to 7	2	3	2	10	3	1	2	4	1	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	7 to 8	3	3	4	2	3	3	4	3	4	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	8 to 9	2	4	5	8	3	2	5	4	4	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	9 to 10	4	6	6	2	2	3	3	4	3	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	10 to 11	6	8	6	7	6	5	7	6	6	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	11 to 12	5	4	4	6	5	6	6	5	6	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	12 to 13	6	4	7	4	4	7	4	5	6	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	13 to 14	7	6	5	4	4	5	7	5	6	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	14 to 15	6	12	5	4	3	9	7	6	8	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	15 to 16	7	10	4	5	5	8	7	6	8	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	16 to 17	4	2	6	5	4	6	5	4	6	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	17 to 18	1	3	4	3	3	3	3	3	3	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	18 to 19	3	4	3	3	4	1	2	3	2	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	19 to 20	2	3	1	4	2	1	1	2	1	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	20 to 21	1	1	0	1	1	1	0	1	0	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	21 to 22	0	0	2	0	2	1	1	1	1	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	22 to 23	0	1	0	1	2	0	0	1	0	
50418	36B-3km West of Bollon	3.36	36B	BALONNE H	0	37.28	GAZETTAL	23 to 24	0	0	0	0	0	0	0	0	0	

Appendix C Turn warrant assessment

WARRANTS FOR TURN TREATMENTS CALCULATOR

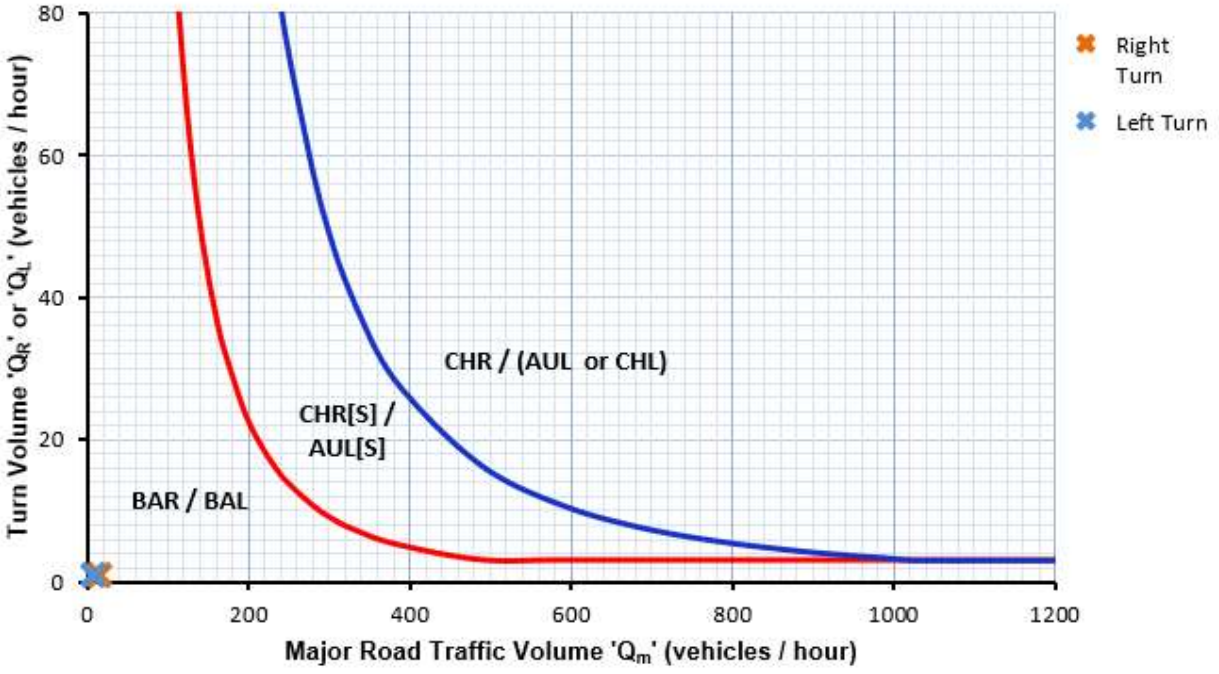
PROJECT: 23E-0152

Background + development 2024 peak hour

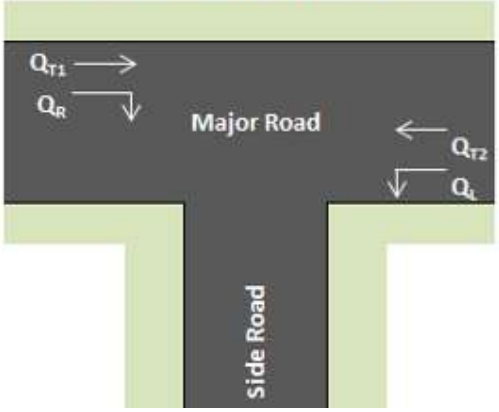
RMA Engineers

INTERSECTION DETAILS		
Major Road		Balonne Highway
Side Road		Site Access
Splitter Island on Major Road	Yes or No	No
Design Domain	NDD or EDD	NDD
Major Road Design Speed	(km/h)	110
TRAFFIC VOLUMES (Vehicles/Hour)		
Major Road approaching through traffic Flow	Q_{T1}	6
Major Road opposing through traffic flow	Q_{T2}	7
Right Turn Traffic Flow	Q_R	1
Left Turn Traffic Flow	Q_L	1
Major Road Traffic Volume for Right Turn	Q_M	14
Major Road Traffic Volume for Left Turn	Q_M	7

Turn Warrent Graph (as adapted from RPDM Figure 13.22)



CALCULATION OF MAJOR ROAD TRAFFICE VOLUME PARAMETER



TURN TYPE	SPLITTER ISLAND	Q_M
Right	No	$Q_{T1} + Q_{T2} + Q_L$
Right	Yes	$Q_{T1} + Q_{T2}$
Left	No/Yes	Q_{T2}

NOTES:

Right turn: BAR

Left turn: BAL

WARRANTS FOR TURN TREATMENTS CALCULATOR

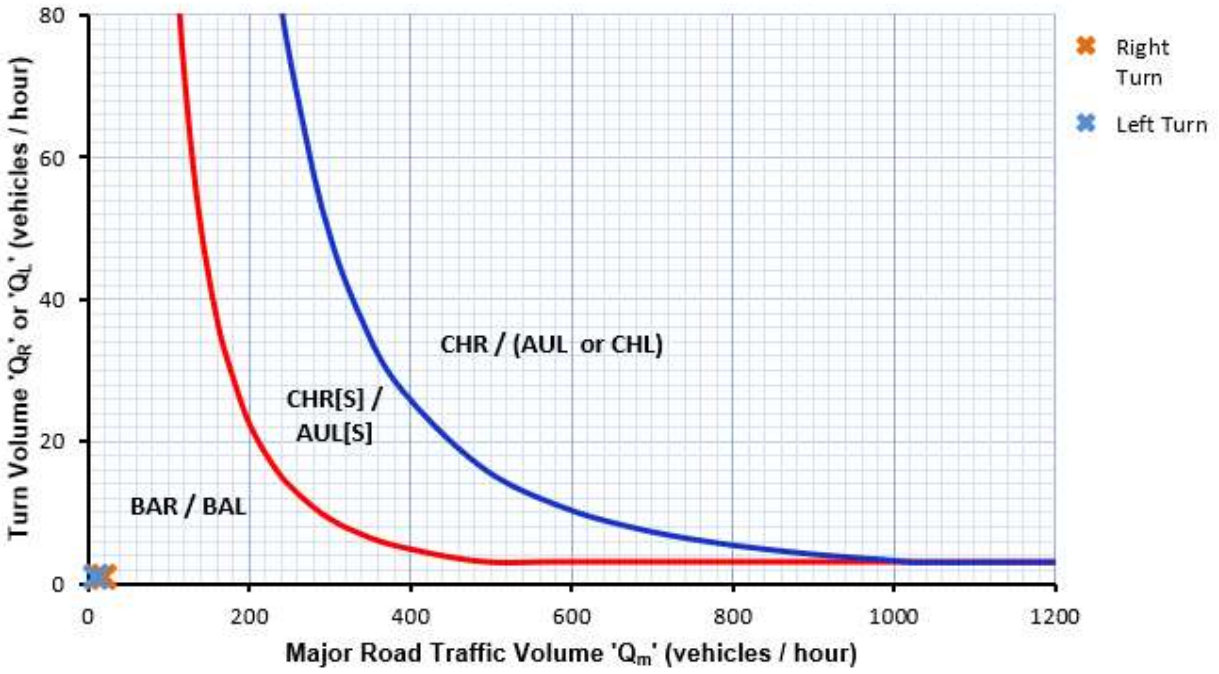
PROJECT: 23E-0152

Background + development 2034 peak hour

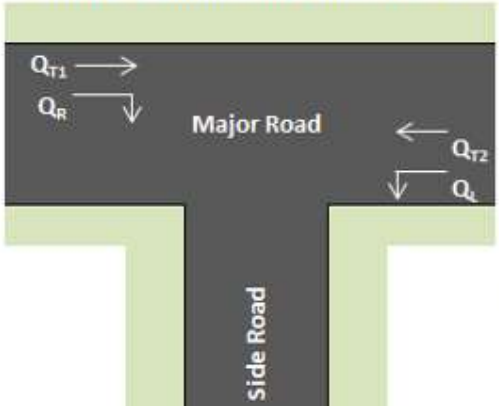
RMA Engineers

INTERSECTION DETAILS		
Major Road		Balonne Highway
Side Road		Site Access
Splitter Island on Major Road	Yes or No	No
Design Domain	NDD or EDD	NDD
Major Road Design Speed	(km/h)	110
TRAFFIC VOLUMES (Vehicles/Hour)		
Major Road approaching through traffic Flow	Q_{T1}	8
Major Road opposing through traffic flow	Q_{T2}	10
Right Turn Traffic Flow	Q_R	1
Left Turn Traffic Flow	Q_L	1
Major Road Traffic Volume for Right Turn	Q_M	19
Major Road Traffic Volume for Left Turn	Q_M	10

Turn Warrent Graph (as adapted from RPDM Figure 13.22)



CALCULATION OF MAJOR ROAD TRAFFICE VOLUME PARAMETER



TURN TYPE	SPLITTER ISLAND	Q_M
Right	No	$Q_{T1} + Q_{T2} + Q_L$
Right	Yes	$Q_{T1} + Q_{T2}$
Left	No/Yes	Q_{T2}

NOTES:

Right turn: BAR

Left turn: BAL

WARRANTS FOR TURN TREATMENTS CALCULATOR

PROJECT: 23E-0152

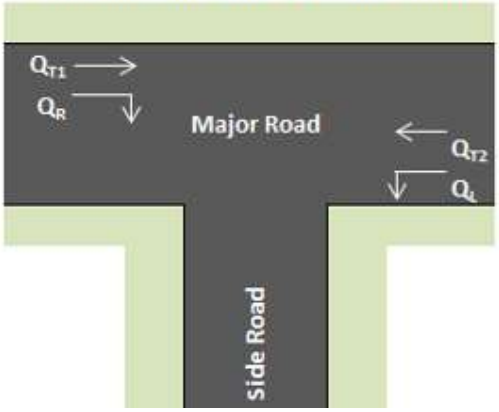
Background and Development 2034 peak hour

RMA Engineers

INTERSECTION DETAILS		
Major Road		Balonne Highway
Side Road		Site Access
Splitter Island on Major Road	Yes or No	No
Design Domain	NDD or EDD	EDD
Major Road Design Speed	(km/h)	110
TRAFFIC VOLUMES (Vehicles/Hour)		
Major Road approaching through traffic Flow	Q_{T1}	8
Major Road opposing through traffic flow	Q_{T2}	10
Right Turn Traffic Flow	Q_R	1
Left Turn Traffic Flow	Q_L	1
Major Road Traffic Volume for Right Turn	Q_M	19
Major Road Traffic Volume for Left Turn	Q_M	10

Turn Warrant Graph (as adapted from RPDM Figure 13.22)

CALCULATION OF MAJOR ROAD TRAFFICE VOLUME PARAMETER



TURN TYPE	SPLITTER ISLAND	Q_M
Right	No	$Q_{T1} + Q_{T2} + Q_L$
Right	Yes	$Q_{T1} + Q_{T2}$
Left	No/Yes	Q_{T2}

NOTES:

Right turn: SR

Left turn: SL