Ardglen Quarry

Integrated Facility Management Plan

INTEGRATED WHS, ENVIRONMENT & QUALITY MANAGEMENT PLAN

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Plan Approval	Name	Position	Signature
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1 PURPOSE

This Integrated Facility Management Plan (IFMP) has been developed with specific information to allow for effective management and control of Ardglen Quarry (the Facility) in relation to Work Health Safety, Quality and the Environment. This plan and other subsidiary documentation have been developed taking into consideration Daracons Legal and Other Requirements including but not limited to relevant Acts, Regulations, Codes of Practice, Industry Standards / Guidelines and the Consent MP06_0264 (Approval).

In addition, the framework for this plan has been prepared to align with the Daracon Management System (DMS), AS/NZS & ISO Standards and Client requirements.

Additionally, Daracon commit to implementing all reasonable and feasible measures to prevent any material harm to the environment, as set out in Condition1 of schedule 2 of the Approval.

Daracon will not carry out quarrying operations under this Approval until the Environmental Management Strategy (this document) is approved by the Planning Secretary.

This IFMP (Environmental Management Strategy) explains the mechanisms to:

(a) provide the strategic framework for environmental management of the development;

(b) identify the statutory requirements that apply to the development;

(c) describe in general how the environmental performance of the development would be monitored and managed;

(d) describe the procedures that would be implemented to:

- keep the local community and relevant agencies informed about the operation and environmental performance of the development;
- receive, handle. respond to and record complaints
- resolve any disputes that may arise during the course of the development;
- Respond to any non-compliance; and
- respond to emergencies; and

(e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development

1.1 DARACON POLICIES

The IFMP has been prepared in line with and shall be executed within the context of goals and objectives outlined in the Daracon Management System (DMS) and associated corporate policies. All persons will be informed of the policies as part of the facility specific induction highlighting the obligations and expectations set out by the Policies.

Environmental, Quality and WHS Policies will be displayed in prominent locations on the facility.

2 FACILITY OVERVIEW AND SCOPE

This Integrated Facility Management Plan (IFMP) has been prepared for the operation of Ardglen Quarry (the Facility).

The scope of work covered by this IFMP involve the following broad activity categories:

- Clearing, stripping and removal of overburden;
- Drilling and blasting of the quarry material;
- Crushing and screening of quarried material;
- Stockpiling of quarried materials;
- Manufacturing and transportation of construction materials;
- Ancillary activities to facilitate the appropriate operation of the quarry;

3 FACILITY REFERENCE DOCUMENTS

3.1 LEGISLATION

- Work Health Safety Act 2011;
- Work Health Safety Regulation 2017;
- Protection of the Environment Operations Act NSW 1997;
- NSW Threatened Species Conservation Act 1995;
- NSW Noxious Weeds Act 1993;
- NSW Heritage Act 1977;
- Commonwealth Aboriginal & Torres Strait Islander Heritage Protection Act 1984;
- NSW National Parks and Wildlife Act 1974;
- NSW Water Management Act 2000;
- NSW Threatened Species Conservation Act 1995;
- Commonwealth Environmental Protection and Biodiversity Conservation Act 1999;
- Environmental Planning and Assessment Act 1979 No 203;
- Environmental Planning and Assessment Regulation 2000;
- NSW Pesticides Act 1999;
- NSW Waste Avoidance and Resource Recovery Act 2001;
- NSW Environmentally Hazardous Chemicals Act 1985 and
- LPSC Local Environmental Plans and Standards.

3.2 STANDARDS, CODES OR GUIDELINES

- SafeWork NSW Codes of Practice;
- SafeWork Australia Codes of Practice;

- Australian and NZ (AS/NZS) Standards;
- ISO9001:2015 Quality Management System;
- AS/NZS 4801:2001 Occupational Health and Safety Management Systems;
- ISO14001:2015 Environmental Management Systems;
- Managing Urban Stormwater: Soils and Construction - Volume 1, 4th Edition (*Bluebook*);
- Hunter Trade Wastewater Policy 2010 and
- AS 2436-2010 Guide to Noise & Vibration Control on Construction, Demolition and Maintenance Sites.

3.3 KEY FACILITY DOCUMENTS

The following Key Facility documents have been identified as being important to ensure Daracon operate the Facility in accordance with Council and other regulatory approvals.

TABLE 1 – KEY FACILITY DOCUMENTS

Client Document Number and Name	
Document Number	Document Name
MP06_0264	DPIE Consent – Modification 2 (Mod 2)
1115	EPL for Ardglen Quarry
QU-PLN-2004-001	Mine Safety Management System (MSMS)

Where there are changes to the above key Facility references, communication of changes that are applicable to this Facility will be communicated to the Facility Coordinator and/or Delegate using a suitable means of communication as prescribed within this plan.

3.4 LICENSES, PERMITS AND APPROVALS

Operational, WHS and Environmental approvals, permits and licenses may be required to be obtained for the Facility. Where these approvals are obtained, a register of all relevant approvals, permits and licenses should be maintained by the Facility Coordinator and/or Delegate at the Facility.

- Department of Planning, Industry and Environment (DPIE) Consent MP06_0264 (Approval);
    - Daracon commit to carrying out the development:
        - generally in accordance with the EA;
        - generally in accordance with the EA MOD 2;
        - generally in accordance with the statement of commitments; and
        - in compliance with the conditions of consent;
- Environment Protection Licence (EPL) in accordance with the Protection of the Environment Operations Act 1997 for extractive industries as well as crushing and grinding where applicable;
- Daracon will ensure all new building and structures and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the Building Code Australia (BCA) as detailed in the Approval;

- All demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version as detailed in the Approval;
- Controlled Activity Approval where required;
- Local Council Permit(s) where required;
- Other approvals required by Regulatory Bodies as required;

All necessary licences, permits and approvals required for the Facility will be obtained and maintained as required throughout the life of the Facility. Inspection and monitoring programs completed as part of this plan will ensure the control measures outlined in any of the above approvals, licenses or permits are complied with at all times.

4 FACILITY ORGANISATION

4.1 FACILITY ORGANISATION CHART

Daracon has developed a Facility organisational chart that identifies the following key personnel involved both at the Facility and offsite:

- Managing Director
- Group Environment, Quality & Training Manager (EMR)
- Group WHS Manager (RTWC)
- Divisional Manager
- Facility Coordinator and/or Delegate / Coordinator
- Plant Manager
- Asset & Security Manager
- Facility related Supervisor(s)
- Facility ENV / WHS Coordinator (ESR)
- Return to Work Coordinator (RTWC)
- First Aider
- Emergency Response Controller.

The organisation chart is available within **APPENDIX 1** of this management plan and must be communicated to workers as part of the Facility induction and displayed in a prominent location at the facility.

4.2 HUMAN RESOURCES

Human Resource (HR) requirements shall be managed in accordance with the relevant DMS HR processes and in correspondence with the Human Resource Manager and/or delegate.

4.2.1 INDUSTRIAL RELATIONS

Industrial Relations (IR) requirements shall be managed in accordance with the provisions made under **PRO.007** *Human Resources* procedure.

4.3 ROLES AND RESPONSIBILITIES

Roles and Responsibilities that have been developed for the Facility are available in **Appendix 2** of this management plan. The roles and responsibilities document shall be communicated to all workers as part of the Facility induction process.

This document includes details of Facility roles, qualifications and responsibilities of each position including any Facility specific critical activities that need to be highlighted as per positions prescribed within **Clause 4.1** of this plan.

4.3.1 MANAGEMENT PLAN AUTHORITY AND APPROVAL

The Divisional Manager and/or delegate responsible for the management of the Facility has the authority to approve specific Quality, Environmental and WHS management plans on behalf of the Manager Responsible for Daracon Management Systems.

Any requested deviation from Daracon system requirements must be approved only by the Manager Responsible for Daracon Management Systems and/or their delegate.

5 FACILITY SPECIFIC ITEMS

5.1 HOURS OF OPERATION

The hours of operation for this Facility are shown below in **Table 2**. Management of working hours shall be in accordance with **PRO.008** *Fitness for work and Injury Management*.

Daracon commit to implementing and complying with the work hours listed in Table 2 (hours of work).

TABLE 2 – HOURS OF WORK

Activity	Day	Time
Topsoil/overburden removal/emplacement	Monday-Saturday	7.00am to 5.00pm
	Sunday	None
Blasting	Monday-Friday	10:00am to 3.00pm
	Saturdays, Sundays and Public Holidays	None
In-pit activities (including drilling, extraction, and transfer of material out of the pit)	Monday-Saturday	7.00am to 5:30pm
	Sundays and Public Holidays	None
Out-of-pit activities (including processing, and stockpiling)	Monday-Saturday	7.00am to 5:30pm
	Sundays and Public Holidays	None
Maintenance (if inaudible at nearby residences)	Monday-Sunday	Any time
Truck loading and distribution	Monday-Saturday	6.30am to 5.30pm
	Sundays and Public Holidays	None
Rail loading	Monday-Sunday	7:00am to 10:00pm

5.2 FACILITY ACCESS & SECURITY

Access to the Facility shall be strictly limited to inducted persons, visitors and/or subcontractors and suppliers. The Facility Coordinator and/or Delegate is to ensure there is a clearly signposted and accessible access point to the Facility office to ensure all non-inducted persons (i.e. Visitors, Subcontractors & Suppliers) report to the office in the first instance and sign into the Visitors Register using **REG.00601** or any other approved system.

Access, egress, provision of safe pedestrian routes and vehicle / plant movement routes for the Facility will be communicated to all persons during the Visitors and/or Facility-specific induction (see Figure 1) and/or toolbox talks from time to time where conditions change.

Visitors must be escorted around the Facility, by a Facility inducted person at all times and shall wear PPE relevant to the area being accessed during their visitation.

5.2.1 SECURITY / THEFT CONSIDERATIONS & CONTROLS

Suitable fencing should be erected around the Facility as required to prevent unauthorised access and protect the safety of such unauthorised persons.

Facilities must consider other security requirements, including but not limited to the following:

- Video surveillance;
    - e.g. Monitors, cameras, video recorders Surveillance cameras (internal and external).
- Security lighting;
    - e.g. Emergency lighting, exit lights, exterior grounds, and car park lighting.
- All storage/shipping containers must have a lock box fitted to prevent the removal of locks;
- All gates, shipping containers and offices are to have locks fitted;
- Check that all mobile plant at the Facility can be secured and isolated via e-stops and/or battery isolators (or both) to prevent any member of the public from operating plant on or off the Facility;
- If any plant on the Facility including sub-contractors is unable to be secured and/or isolated, then it is to be removed from the Facility or blocked in by plant that can be secured;
- Ensure Fire extinguishers are removed from plant and secured in containers to eliminate theft and or used as a weapon to damage plant and or equipment;
- Where possible all items of plant must be parked up within an area to prevent or minimise fuel theft or vandalism;
- Place signs in conspicuous places that show the afterhours contact number of the Facility Coordinator and/or Delegate so that if in the event of unauthorised access, members of the public or authorities have immediate access to contact details;
- Security should be engaged to patrol the Facility and contact Facility Coordinator and/or Delegates if anything is out of place.

5.2.2 DARACON FACILITY LOCKS

To assist in securing Daracon Property, Facilities are requested to use the following locks:

Gate Locks

- Ardglen – BAR and MPP padlock;

Office Locks for demountable buildings

- Ardglen – BAR padlock;

Keys for facilities are available from the applicable Facility Coordinator and/or Delegate. All other locks used will have a special code; if you need assistance please contact the relevant Manager responsible for Fleet, Property & Security as required.

5.2.3 CHAIN OF RESPONSIBILITY

The Facility Coordinator and/or Delegate in consultation with the Daracon Manager for Transport must ensure that all transport-related tasks completed by, or on behalf of the Facility, are done so in a safe and compliant manner in accordance with the following legislation:

- Heavy Vehicle National Law (HVNL) (NSW 2013) and
- The Chain of Responsibility (CoR) Law.

The Facility management team must comply with its obligations in relation to fatigue management, speed compliance, mass, maintenance, dimension, and restraint of loads.

5.3 TRAFFIC MANAGEMENT

All access to Facility and vehicle, plant & pedestrian movements within the Facility shall be managed in accordance with the Traffic and Transport Management Plan (TTMP see **APPENDIX 3**) developed for the Facility.

Following the approval of Mod 2, we're currently liaising with representatives from Liverpool Plains Shire Council (LPSC) to review and update the TTMP and expect to submit a revised version to DPIE for approval later in 2021.

Facility internal plant, pedestrian & vehicle movements will be communicated at the time of induction to the Facility and ongoing using a Vehicle Movement Plan (VMP). This is intended to ensure the safe control and interaction of vehicles & pedestrians around the Facility. Copies of VMPs should be contained within Facility records where practicable and current versions will be displayed in prominent locations around the Facility.

VMPs may be in the form of but not limited to a drawing on a whiteboard or Pre-start brief etc. Examples may be as follows:

- Overall Facility layout;
- Traffic routes for specific works and/or
- Standard Delivery routes etc.

Traffic & Facility signage shall be erected around work areas and the Facility as required to provide direction to persons operating vehicles or walking around the Facility.

Where works require traffic control plans (TCPs), these plans shall be completed by a competent person and any development, modification or inspections of traffic controls shall be recorded in Facility records.

Communication of plans will be through Facility communication processes as identified in **Clause 11** of this plan.

5.4 FACILITY EMERGENCY AND NOTIFICATION MANAGEMENT

The Facility Manager and/or delegate will ensure suitable Emergency and Notification Response Processes are developed for the facility in accordance with **PRO.015** *Emergency Management*.

FRM.01501 *Evacuation and Emergency Control Map (EECM)* shall be updated and reviewed for adequacy before being printed and used as part of the facility specific display documents.

The Evacuation and Emergency Control Map (EECM) will form part of the facility specific induction and must be displayed on site in a prominent location(s). Everyone accessing site must be inducted into the Evacuation and Emergency Control Map (EECM). Personal Emergency Evacuation Plans will be developed in accordance with **PRO.015** *Emergency Management* procedure.

5.4.1 EMERGENCY SERVICES

Daracon will ensure that the following occurs at the Facility to assist emergency services crews in a response to an emergency:

- Suitable access will be maintained for emergency vehicles through Facility at all times where practicable and
- Consultation may need to occur with Emergency Services and the NSW Police as required in order to review any potential impacts to emergency services.
- Pollution Incident Response is detailed further within **Clause 6.10** of this IFMP.

5.4.2 IDENTIFICATION OF FORSEEABLE EMERGENCIES AND NOTIFICATIONS

As part of the facility Emergency Preparedness and/or facility emergency management processes, likely foreseeable emergency and notifiable scenarios should be identified and recorded as part of the initial Global Risk Assessment (GRA) using **IM-FOR-0301-002.**

The following list of foreseeable emergencies and notifiable scenarios should be used to supplement the considerations specific to the facility.

Potential Situation	Potential Hazard(s) / Aspects	Known Options for Response
Damage to and/or Striking Overhead Powerlines	▪ Fire ▪ Electrocution ▪ Power disrupted ▪ Explosion (HV) ▪ Persons electrocuted ▪ Traffic Disruption ▪ Live electrical cables on ground	▪ Clear area of all personnel ▪ Have personnel in place at a safe distance to prevent any access by media or onlookers ▪ Call the utility owner for emergency assistance. ▪ Advise any nearby residents or businesses of situation if they are at risk ▪ Implement traffic control measures until emergency services attend scene ▪ Back machine away from contact with powerlines if possible and safe to do so ▪ If there is a risk of injury, assist the operator in exiting the machine by implementing the emergency procedures as detailed in Daracons Working Around Overhead Powerline's permit for Low Voltage Lines. ▪ Implement traffic control measures to prevent vehicles accessing danger area and consider access for emergency services vehicles. ▪ If the power line is in contacting equipment, advise the operator to remain in the vehicle and do not allow anyone to touch the plant. If possible, move the plant clear of power line. If the person is at risk if they remain in plant ▪ ALWAYS ASSUME the powerlines are "live" unless you are aware that the utility owner has isolated the power. ▪ Notify Regulators via WHS Manager or delegate as required
Vehicle Accident	▪ Person trapped under vehicle on road. ▪ Multiple vehicle collision.	▪ Call 000 for ambulance to attend site ▪ Implement traffic control measures to allow emergency services attend scene. ▪ Stop vehicles accessing the danger area and consider access for emergency services ▪ Ensure that pedestrians have safe passage around worksite. ▪ Render First Aid if safe to do so. ▪ Notify Regulators via WHS Manager or delegate as required
Person struck by operational plant (Worker or pedestrian member of public)	▪ Person injured, possible fatality.	▪ Call 000 for ambulance to attend site ▪ Implement traffic control measures to allow emergency services attend scene. ▪ Notify Regulators via WHS Manager or delegate as required Render First Aid if safe to do so.

Potential Situation	Potential Hazard(s) / Aspects	Known Options for Response
Person caught in plant and equipment	▪ Person injured, possible fatality.	▪ Call 000 for ambulance to attend site ▪ Render First Aid if safe to do so ▪ Implement traffic control measures to allow emergency services attend scene. ▪ Stop vehicles accessing the danger area and consider access for emergency services vehicles. ▪ Notify Regulators via WHS Manager or delegate as required
Fall from a height and/or trapped in a confined space	▪ Person injured, possible fatality.	▪ Call 000 for ambulance and other required emergency services to attend site ▪ Render First Aid or onsite rescue if competent people are available and it is safe to do so ▪ Implement traffic control measures to allow emergency services attend scene. ▪ Stop vehicles accessing the danger area and consider access for emergency services vehicles ▪ Notify Regulators via WHS Manager or delegate as required
Excavation Collapse, Inrush	▪ Person injured possible fatality. ▪ Person trapped under materials	▪ Call 000 for emergency services to attend site ▪ Utilise onsite equipment to remove materials ▪ Render First Aid if safe to do so ▪ Implement traffic control measures to allow emergency services attend scene. ▪ Stop vehicles accessing the danger area and consider access for emergency services vehicles ▪ Isolate inrush source where possible ▪ Notify Regulators via WHS Manager or delegate as required
Worker caught under suspended load	▪ Potential serious injury and/or fatality	▪ Cease work immediately ▪ DRABC – administer first aid if safe to do so ▪ Call 000 for emergency services to attend ▪ Remove load if safe to do so for the injured worker or if life threatening ▪ Delineate area ▪ Notify Regulators via WHS Manager or delegate as required

Potential Situation	Potential Hazard(s) / Aspects	Known Options for Response
Electrocution installing services	▪ Fatality (rescuers also at risk) ▪ Electric Shock	▪ Shut off and Isolate power supply if safe to do so ▪ DRABC – administer first aid if safe to do so ▪ Call 000 for emergency services to attend ▪ Notify Regulators via WHS Manager or delegate as required
Fire (including bushfires)	▪ Property damage ▪ Personal injury ▪ Impact on the community	▪ Use fire-fighting equipment or water cart on fire if safe to do so ▪ Clear area of all personnel – raise alarm ▪ Call 000 for emergency services to attend ▪ Advise evacuation of any nearby residents or businesses of situation if they are at risk ▪ Notify Regulators via WHS Manager or delegate as required
Potential pollution from Discharge, Noise, Blast, Spill, Equipment failure, non-compliance with the Approval, complaint received or other notifiable event	▪ Impact to local waterways ▪ Impact to local residents ▪ Impact to offsite ecology ▪ Impact to onsite ecology ▪ Long Term Impacts	▪ Implement pollution control barriers / silt fences ▪ Regular blast, noise and air quality monitoring ▪ Reporting and addressing any exceedances ▪ Appropriate storage of stockpiles ▪ Stabilisation of exposed excavations ▪ Establish surface water diversion structures around loose materials ▪ Identify extent and severity of groundwater contamination ▪ Minimise further migration of contaminants to groundwater by removal, in-situ treatment, and/or containment of the source materials ▪ Implement surface water diversions around source materials ▪ Prevent or minimise further migration of the contaminated plume ▪ Cease work immediately in the vicinity of any potential contaminated soil/water ▪ Establish a ‘no go’ zone ▪ Initiate investigation ▪ Identify extent and severity of the contaminated soil / water ▪ Reduce spread of contaminated materials by implementing surface water diversion structures and / or containment structures ▪ Notify Regulators via Environmental Manager as required ▪ If the results of monitoring required in schedule 3 of the Approval identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Daracon will notify the Planning

Potential Situation	Potential Hazard(s) / Aspects	Known Options for Response
		Secretary and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties), as set out in Condition 1 of schedule 4 of the Approval and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria ▪ As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in schedule 3 of this consent, Daracon will provide the details of the exceedance to any affected land owners and/or tenants. For any exceedance of any air quality criterion in Schedule 3 of this consent, the Applicant must also provide to any affected landowners and tenants a copy of the fact sheet entitles "mine dust and you" (NSW Health, 2017) ▪ Within seven days of becoming aware of a non-compliance, Daracon will notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application umber and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what action have been, or will be, undertaken to address the non-compliance ▪ Daracon will immediately notify the department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident ▪ Section 10 and 11 of this document describes the relevant processes for incident reporting, investigation and communication with the community and other stake holders

5.4.3 RESCUE PLANS

All work being completed onsite should consider any need to develop activity specific rescue plans (*this is likely to be required when completing high risk work*). Rescue Plans should be detailed as a control within Safe Work Method Statements (i.e. SWMS).

Alternatively, use **FRM.01508** *Activity Specific Rescue Plan* where activities are being completed under other activity specific risk assessments (i.e. JSEA / JSA).

Activities that require a rescue plan may be the following but not limited to:

- Confined Space Entry;
- Working at Heights;
- Excavation or Trenching and/or
- Where constructing, conducting alterations, or dismantling permanent and/or temporary structures (*e.g. scaffold*).

5.4.4 REVIEW OF EMERGENCY PROCEDURES

The Facility Manager and/or delegate must ensure the frequency of drills are planned and recorded on the Corporate Emergency Management Schedule in accordance with **PFC.01501** *Planning & Carrying Out of Emergency Drills*.

Emergency drills shall be scheduled and conducted initially within the **first 3 months** of starting work at a site or occupying a facility and then, where appropriate, as a minimum once annually.

FRM.01504 *Emergency Preparedness Evaluation* form must be completed by the responsible person(s) to evaluate the performance of the emergency response. Emergency drills shall also be performed following an incident, near miss, significant change to the emergency plan and/or other practical reasons *(e.g. client requests)*.

The emergency drill may comprise of environmental and / or safety aspects and should include any specific with emergency services involvement where applicable. The emergency scenarios used in the drill will be determined by the ECO and should be reflective of the scenarios recorded in the risk assessment.

Considering the relevance to the program of works, the **foreseeable emergency scenarios** identified **should** be tested. Multiple scenarios may be tested in the one drill.

5.4.4.1 SCENE PRESERVATION

There may be incidence occurrences at a Facility that require specific management to ensure the incident scene is preserved and not disturbed after an incident. This process may need to be completed after a serious incident to allow for investigations by Facility management representatives, Daracon Group Senior Management and/or external Regulatory Authorities.

These types of incidents are normally referred to as 'notifiable' and/or 'reportable incidents' and typically relate to:

- An incident that results in the death of a person;
- A serious injury or illness of a person and/or
- A potentially dangerous incident.

The following actions are required from all persons on a Facility in response to such an incident:

- Only alter the incident scene to make the Facility safe or to minimise the risk of a further damage and/or risk to others;
- Complete tasks for which the Regulator has given authority to do so, and/or
- Conduct tasks associated with any Police Investigation.

5.4.5 RESPONSIBLE EMERGENCY PERSONS

Daracon will ensure suitable persons are identified and available at the Facility to ensure responses to emergencies are adequately resourced. Emergency Wardens / Controller(s) on this Facility will be nominated on the emergency procedure / display document and relevant Facility signage showing contact phone number/s and the work area UHF channel where applicable.

5.4.6 PRIVATE EMERGENCIES

Daracon has established an Emergency Contact Number that shall be provided to Daracon employees during the Corporate Induction and then ongoing reminders will be provided during Facility specific inductions to Daracon Facilities. This phone number should be provided by workers to their families providing a means to contact workers in the event of a private emergency during work hours outside of meal breaks.

Daracon Group Emergency Number:

- 1800 597 977 (Toll Free) or
- (02) 4974 9393.

The Daracon Emergency Number will be operational during standard working hours being 7am – 5pm (Mon-Fri). All other works shall be managed specifically by site management teams ensuring site contact details are provided to workers allowing for families to contact site management where a private emergency may occur during weekends and/or out of hours works (i.e. night works).

5.4.7 FIRST AID IN THE WORKPLACE

First Aid in the workplace shall be managed in accordance with the requirements of **PRO.015** *Emergency Management.*

All Daracon workplaces onsite will have a least one first aid kit appropriate for the site or place of work. The size and contents of the kit will be dependent on the number of workers, characteristics of the work scope, risk exposure and location of the work activity. A risk assessment will be completed using **IM-FOR-0301-002** *Global Risk Assessment and the First Aid Risk Assessment tab.*

First aid kits will be located as required throughout the facility. They will be clearly visible, easily accessible, and sign-posted (*as per AS 1319 - Safety Signs for the Occupational Environment*).

The nominated responsible person(s) in the workplace, usually a first aider, shall maintain the first aid kit(s) using the following inventory check lists:

- **FRM.01505** *First Aid Kit Check (Grab Kit)*
- **FRM.01506** *First Aid Kit Check (Wall Mount Kit)*
- **FRM.01507** *First Aid Kit Check (Vehicle Kit)*

The responsible person must ensure the following:

- Regulatory check and monitor usage of the first aid kit(s) and ensure items are replaced as soon as practicable after each use.
- Ensure the kit(s) contains a complete set of the required items - checks are to be done against the inventory list provided with each kit (the inventory checklist itself is also to be signed, dated and kept with the kit after each check and replenishment), and
- Ensure all items are in working order, have not deteriorated, are within their expiry dates and that sterile products are sealed and have not been tampered with.

Daracon head office stores are responsible for all ongoing annual kit inspections and will be the main point of contact for kit replacements and/or replenishments.

The WHS Coordinator and/or delegate is responsible for the onsite management and review of first aid treatment and equipment available for use (*see* the **APPENDIX 1** *for more details*).

5.4.7.1 FIRST AIDERS

Names of suitably trained and competent First Aiders will be displayed in a prominent location across the facility along with their contact numbers / UHF Channel using **FRM.01501** *Evacuation and Emergency Control Map (EECM)*

The respective *EECM* must be displayed where the kit(s) are located showing pictures of the First Aiders and contact details.

5.4.8 FATIGUE MANAGEMENT

All Workers, including subcontractors, working at this facility shall be subject to the fatigue management requirements of **PRO.008** *Fitness for Work and Injury Management*.

Except in the case of an emergency and subject to the approval of risk management controls by an appropriate manager, the following limitations on hours of work shall apply to workers on Daracon operational sites/facilities:

- **Normal** working hours should not exceed **12-hours** in a 24-hour period;
- Working hours on site may be extended to **14-hours** in a 24-hour period upon completion of **FRM.00808** *Site Fatigue Risk Analysis (Change Management)* and a suitable risk assessment with affected personnel which is approved by the Manager in charge of the site or Operations in consultation with the Daracon WHS Manager and/or delegate.
    - Minimum rest break requirements shall be considered prior to commencing the following shift;
    - **FRM.00807** *Fitness for Work Observation* should be considered for use with individual workers that have a higher risk of being fatigued from normal operating hours of work *(e.g. ground workers conducting manual tasks for long periods in hot conditions)* and
    - Travel times to and from site must also be taken into consideration when planning to extend working hours on site.
- In special cases and/or emergency circumstances only working hours on site may be extended to maximum of **16-hours** in a 24-hour period.
    - This may only occur after completion of **FRM.00808** *Site Fatigue Risk Analysis (Change Management)* and **FRM.00807** *Fitness for Work Observation* with all affected individuals and
    - A suitable a risk assessment is completed with affected personnel which must be approved by the Divisional Manager in charge of the relevant Operations and the Divisional Manager HSEQT and/or delegate.

  Where hours of work are required to be carried out up to 16 hours:
    - Minimum rest break requirements shall be considered prior to commencing the following shift and
    - Alternate accommodation / transportation **<u>must be arranged</u>** for workers where 16 hours of onsite work is conducted.
- Consecutive workdays should be limited to **7 days** where practicable;
    - Consecutive workdays may be extended to **14 days** upon completion of **FRM.00805** *Fatigue Planning Checklist* and incorporate required controls into the operational risk assessment with affected personnel which must be approved by the Daracon WHS Manager and/or delegate.
    - Any workers who are required to work more than 7 days straight must participate in an individual fitness for work assessment before they continue work past the initial 7 consecutive days using **FRM.00807** *Fitness for Work Observation*.

- Consecutive workdays that are required to extend beyond 14 days must be assessed in consultation with the Divisional Manager in charge of the relevant Operations and the Divisional Manager HSEQT and/or delegate.

Where Client requirements differ from the above, those requirements shall be specified within the Integrated Facility Management or equivalent Plan and be communicated to all personnel at the time of commencing works onsite. The responsible Divisional Manager must be made aware of any variation to Daracon fatigue hours and be accepting of the controls and any risks associated with the changes.

5.4.8.1 HEAVY VEHICLE DRIVERS

Heavy Vehicle Drivers not operating under the NHVAS Basic Fatigue Management Accreditation shall adhere to the fatigue management requirements outlined within **PRO.008** *Fitness for Work and Injury Management* in addition to all Heavy Vehicle Management Related Procedures.

5.5 ALCOHOL & OTHER DRUGS

The management of being fit for work and unaffected by alcohol and other drugs (including prescription or over-the-counter medications) is a fundamental responsibility of every worker and shall be managed in accordance with **PRO.008** *Fitness for Work and Injury Management*.

Daracon expects the following will be adhered to at this facility:

- No person will work whilst affected by alcohol or other drugs;
- No unauthorised consumption of alcohol will be permitted onsite;
- The use, possession or selling of illegal drugs will not be tolerated onsite, and
- Daracon Employees, Subcontractors and Suppliers entering this facility that are taking prescribed or pharmaceutical medication with known side effects that could impair their ability to perform work safely, must notify the Daracon Facility Manager or Supervisor prior to commencing work onsite.

Workers have a responsibility to immediately report any concerns about their own and that of another person's fitness for work to their Supervisor or manager. The services of a company-sponsored Employee Assistance Program (EAP) will be made available to any person requiring assistance to deal with alcohol or other drug related issues.

Personnel at this facility may be subject to drug and alcohol testing conducted by Daracon and/or the Client in the form of:

- Post incident;
- Random testing;
- Blanket testing;
- Testing for Cause and
- Site induction.

All test results and records will be maintained in the strictest confidence. All workers, subcontractors and visitors shall be informed of their obligations in relation to drugs and alcohol as part of the facility induction.

5.6 EMPLOYEE ASSISTANCE PROGRAM

An Employee Assistance Program (EAP) is available for workers that assists in providing a variety of services designed to actively promote health, wellbeing, and personal development.

Request a brochure on the Employee Assistance Program from your Supervisor / Manager or for further information and assistance speak with a member of the Human Resources team.

5.7 INJURY MANAGEMENT

All workplace injuries and/or illness shall be immediately reported to the Supervisor, or a more Senior representative in their absence in accordance with the requirements of **PRO.008** *Fitness for Work and Injury Management.*

Daracon will ensure that injury management and rehabilitation processes commence as soon as practicable after notification of an injury.

This will be achieved by:

- Obtaining an accurate medical diagnosis and early treatment of the injury or illness,
- Giving priority to an early, safe return to pre-injury duties or suitable duties in a manner consistent with medical requirements.
    - *For example, the development of Individual Worker Recover at Work Plans will support the above requirements.*

Where required under the contract, the Facility Manager shall notify the Client Representative or delegate of all injuries and ensure the proposed treatment strategies are in line with those of the Client and Daracon.

5.8 HEALTH & SURVEILLANCE MANAGEMENT

Employees and Labour Hire workers must submit to mandatory drug and alcohol testing as part of the pre-employment or pre-placement process, and any applicable ongoing medical health surveillance requirements (e.g. heavy vehicle, potential exposure to a health hazard, working in the rail corridor or mine site requirements) in accordance with **PRO.008** *Fitness for Work and Injury Management.*

These medicals are completed to determine the following:

- The suitability of a person to perform the tasks required of their role – functional assessment;
- A person's level fitness for the work should they be suffering from some form of physical or psychological impairment; and

- To assist in the preparation of any suitable duties plan for a worker should the need arise.

Daracon will disclose personal information (i.e. pre-employment medicals) of current employees to third parties (i.e. Clients) where required for the purpose of their employment.

5.9 FACILITY SPECIFIC OBJECTIVES AND TARGETS

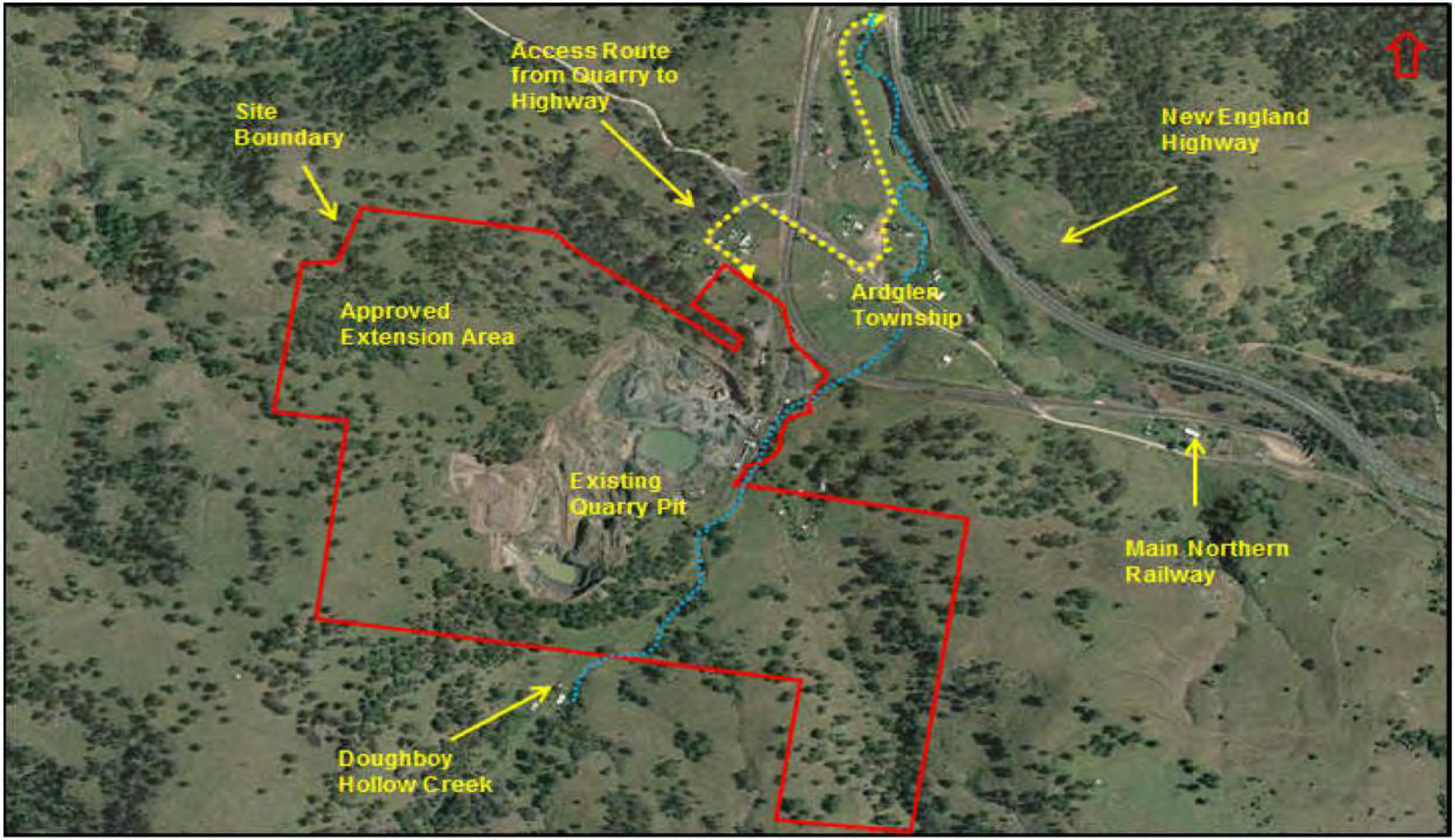
The following table provide the facility with the opportunity to identify, document and communicate key objectives and targets. These objectives and targets enable facility management teams to track and compare respective KPI's as part of facility reporting functions.

Performance indicators are not only used to measure performance but also to create learnings, identify areas for improvement and/or highlight systemic issues.

TABLE 3 – OBJECTIVES AND TARGETS (KPI'S)

Performance Indicator	Tool for Record	Responsibility	Target
Facility Inspections (Environmental and security)	IM-REP-0503-001	Facilities Coordinator and/or Delegate	1 per week
ESCP Review and Updating	IM-REP-0503-001	Facilities Coordinator and/or Delegate	Upon substantial changes
Internal environmental audit / inspection	IM-REP-0503-001	Systems Manager	Quarterly
External environmental audit / inspection	Rubicon inspection template	Rubicon representative	Annually
Safety Observations	IM-FOR-0314-001	Facilities Coordinator and/or Delegate	1 per fortnight
Plant, Tool and Equipment Inspections	Inspection Record	Users of Tools and Equipment	Daily or as used
Non-conformances closed out in a timely manner	IM-PRO-1407-001	Facilities Coordinator and/or Delegate	Mthly 100%
Number of Total Recordable Injuries	IM-FOR-0906-003	WHS Manager	Zero
Significant Environmental Incidents	IM-FOR-0906-003	EQ Manager	Zero
EPL annual returns to the EPA	EPA template	Systems Manager	Annually
Annual Environmental Management Reports (AEMR)	AEMR template	Systems Manager	Annually

FIGURE 1 – FACILITY LAYOUT



6 RISK MANAGEMENT OF HAZARDS & ASPECTS

Daracon operates in an environment where there are inherent Work Health & Safety, Environmental and Quality related risks associated with our operations that are to be assessed in accordance with the requirements of **IM-PRO-0301-001** *Risk Management Procedure*.

6.1 GLOBAL RISK ASSESSMENT (GRA)

For Daracon to identify and propose controls to manage Facility risks, a Global Risk Assessment (GRA) shall be completed using **IM-FOR-0301-002.** This risk assessment is aimed at integrating all aspects of risk management applicable to the Facility including the following:

- Facility Operational Risk
  - *Quality related;*
  - *Program risks and Opportunities;*
  - *Environmental;*
  - *Work Health Safety;*
  - *Assets;*
- Corporate Group Risk
  - *Company Reputation;*
  - *Personnel;*
  - *Financial;*

Changing conditions and/or newly identified hazards associated with the works will require the GRA to be reviewed throughout the life of the Facility to ensure all levels of risk are managed to as low as reasonably practicable.

6.2 TASK SPECIFIC RISK

When reviewing and managing risk specifically associated with work activities at a Facility, Daracon must consider the risk management processes as shown in the following clauses.

6.2.1 PERMITS TO WORK

Work activities on this Facility may require additional approvals from time to time. It may be due to the high-risk nature of the work. Examples of potential activities and applicable permits that may be used on this Facility are as follows:

- Excavation Permit – (*Deep Excavations and/or Excavation Works near services*);
- Confined Space Entry Permit – (*Working in a Confined Space*);
- Working near Overhead Powerlines Permit (as defined);
- Working at Heights Permit (*Where there is a risk of a fall that requires specific equipment*) and/or

- Hot Work Permit – (*Where Hazardous Hot Work is required to be completed outside of a static purpose-built work area for such activities*).

Facilities are to assess and identify the need for the use of any of these permits by reviewing applicable work instructions / procedures and completing a risk assessment for the task.

6.3 OPERATIONAL WORK

6.3.1 OPERATIONAL WORK INSTRUCTIONS (WHS)

Daracon has developed ***Operational Work Instructions (OWI)*** for Facility aspects and activities that are considered high-risk in nature; and that relate to the Work Health & Safety of Workers on this Facility. OWIs are available on the company intranet (DMS) to be used by Facilities when planning for activities that need to apply and/or consider specific controls for high-risk works or aspects associated with the Facility. For a list of current OWI's search the term **OWI** on the DMS.

Operational Work Instructions may be used by Facility teams for toolbox communications or in training applications during the Facility. OWIs that are considered to be applicable to this Facility are as follows, but are not limited to:

- OWI.07 Working with and Storage of Hazardous Chemicals;
- OWI.014 Management of Public Safety;
- OWI.016 Traffic & Pedestrian Management;
- OWI.018 Bushfire Management;
- OWI.020 Workers on foot & Mobile Plant Interaction;
- OWI.021 Workers on foot working in & Around a Rail Corridor;
- OWI.022 Workers on foot working with & Around Fixed Plant;
- OWI.023 Isolation of Hazardous Energy;
- OWI.024 Hazardous Manual Tasks;
- OWI.025 Performing Hot Work;
- OWI.026 Working at Height;
- OWI.027 Working in Confined Spaces;
- OWI.028 Working Near Overhead Utilities;
- OWI.029 Scaffold & Scaffolding Work;
- OWI.036 Working Alone;
- OWI.039 Cranage and Lifting;
- OWI.040 Managing Crystalline Silica Exposure;
- OWI.041 Site Security Management;
- OWI.043 Working in Hot Conditions;
- OWI.048 Measuring of Oversized Loads (Heavy Haulage);

Specific controls from OWIs that are applicable to the works being completed at a Facility shall be included in the activity specific risk assessment (i.e. SWMS or JHA's) and communicated to workers.

6.3.2 SAFE WORK METHOD STATEMENT (SWMS)

Safe Work Method Statements (SWMS) are risk assessment documents that identify WHS Hazards and Environmental Aspects for our work sites. SWMS incorporate planned methods on how to undertake a job safely and must be completed for any high-risk construction work at a minimum using **IM-FOR-0302-001** *Safe Work Method Statement and Risk Assessment (SWMS)*.

The Facility Manager and/or delegate shall ensure the development of a SWMS involves all persons, or a representative group, involved in a task (*specifically High-Risk Construction Work*). Where and when required, task specialists may need to be involved in the risk assessment review & application of controls. The names of persons, workers, and subcontractors involved in the development and review of the SWMS must be recorded on the document. All SWMS must be reviewed by those persons performing the task before work is commenced.

Changes to a task, or where an inspection, incident and/or audit identifies that controls are not adequate; the SWMS will need to be reviewed by the Supervisor ensuring all workers involved in that activity are consulted on the revised hazards and/or controls. Acknowledgement of change(s) will be though the risk assessment sign on sheet that must be kept with the specific document as site records.

In addition to this plan, details of the process of assessment, monitoring and review of safe work method statements are contained within the Daracon procedure Risk Management ***IM-PRO-0301-001***.

Regular site safety inspections shall be performed to determine if work practices are in accordance with the relevant safe work method statement. Work shall cease if high risk work is being performed with no risk assessment or not in accordance with the agreed risk assessment for the task.

Safe Work Method Statements that are developed for the site will adequately address all WHS / ENV issues particular to the specifics of the site.

6.3.2.1 SWMS REVIEW PROCESS

Initial and ongoing SWMS review and approval tracking shall be maintained using methods determined by the work team. These may include SWMS registers, file naming conventions and/or other tools such as TeamBinder.

SWMS for this site where works are scheduled to be < 4wks in duration should be reviewed frequently taking into consideration risks associated with the task. For long term tasks (*i.e. > 4wks*), the SWMS should be reviewed at least **Monthly** by the Facility Manager and/or delegate. Any changes shall then be re-communicated to the workers with all persons involved in the activity re-signing the document.

SWMS may be reviewed using the SWMS change sheet, handwriting within the existing SWMS and/or re-issue from the Facility Manager and/or delegate post review and with typed changes.

Subcontractor SWMS shall be reviewed by the Facility Management Team using the *SWMS Review Sheet* **IM-CHK-0302-001**.

6.3.3 TAKE 5

A Take 5 is an individual risk assessment tool that workers (including managers when working in operational areas) are required to use prior to commencement of a task.

- A 'task' may include more than one 'activity' when completing the Take 5 assessment.

A Take 5 provides the worker with prompts to identify operational hazards / aspects and required controls associated with their WHS and Environmental Risk. The Take 5 should be reviewed whenever the worker notices a change to their task or operational work conditions (e.g. changed weather conditions, other workers commence works impacting upon the safe operation of an activity and/or introduction of new equipment to a task).

6.3.4 JOB HAZARD ANALYSIS (JHA)

Job Hazard Analysis **(IM-FOR-0301-006)** are documented risk assessments used to aid planning for operational work activities. JHA's are similar to SWMS in terms of analysing the work activity across the particular job steps, hazards, controls, and possible consequences.

JHA are typically used in situations that **aren't expressly seen as High-Risk Construction Works**, but still requires appropriate planning and risk control measures to ensure works are conducted in a safe, sustainable, and high-quality manner.

6.4 MANAGEMENT OF CHANGE

Daracon recognises the potential risk associated with organisational and Facility changes that may pose a significant risk to Facilities. These changes may include but are not limited to:

- Equipment Design / Modifications;
- Changes to personnel;
- Work Methodology and/or
- Changes to the Work Environment.

Daracon will ensure that changes do not introduce uncontrolled hazards into the workplace. The management of change process will assess all known immediate and/or long term WHS, Environmental and Quality impacts.

Changes shall only be approved and implemented if hazards are eliminated, and/or the level of risk exposure is reduced to *So Far As Is Reasonably Practicable (SFAIRP)* in line with the company's risk acceptance and avoidance model.

6.5 SUBCONTRACTORS & SUPPLIERS

The Facility shall engage only those Subcontractors who can satisfy the safety, environmental and quality requirements of the contract and as per the requirements outlined in **IM-PRO-0703-001** *Subcontractor & Supplier Management*.

All Subcontractors and suppliers engaged by Daracon must demonstrate a commitment to workplace safety and environmental management. Subcontractors without their own management system should be provided access upon request to this management plan to ensure they understand the requirements within.

The person responsible for engaging a Subcontractor / Supplier must assess the subcontractor(s) / supplier(s) scope of work with the intent to determine the level of subcontractor responsibility in relation to:

- Planning, implementing, and monitoring WHS, ENV & QA work processes;
- Record keeping;
- Reporting on progress, compliance, non-conformances, and incidents;
- Interfaces with other work groups at the Facility;
- Safety and environmental responsibilities including Daracon Alcohol & Other Drugs Policy requirements, associated Procedures and
- Other Facility or business-related aspects where applicable to the engagement.

Once determined these details must be communicated to the Subcontractor to ensure compliance to identified specifications and this plan where applicable.

6.5.1 PREQUALIFICATION, INTERVIEW & REGISTRATION

The person responsible in engaging a Subcontractor / Supplier, after identifying a preferred subcontractor for the works, shall ensure a Subcontractor Interview is completed using ***IM-FOR-0702-003.*** This process is to ensure subcontract agreements and other terms are agreed to before preparing and issuing a Letting Advice using **FRM.01715** to the relevant Senior Management Representative for approval.

When the subcontractor is approved for engagement a Subcontractor Registration form using ***IM-FOR-0702-001*** must be completed and submitted to Daracon Head Office.

Once engaged, the Subcontractor must provide Safe Work Method Statements (SWMS) for all relevant tasks including any other relevant documentation required for Daracon to review and approve using the Safe Work Method Statement Review Checklist ***IM-CHK-0302-001***.

If SWMS submitted by the Subcontractor / Supplier are not satisfactory, this must be addressed and communicated to the subcontractor / supplier for review and modification before works can commence.

6.5.2 SUBCONTRACTOR / SUPPLIER MANAGEMENT & SURVEILLANCE

A Subcontractors performance shall be regularly monitored to assess compliance in relation to either their approved Facility WHS, ENV & Quality Management Plan(s) or the Daracon Integrated Facility Management Plan (IFMP) and associated procedures.

Subcontractor work activities shall be included as part of the Facility *Safety Observation* process as per **Table 3** of this IFMP. Records of these inspections are included in Facility records. Details of observations and surveillances completed are included within the Facility monthly report issued to the responsible Divisional Manager for the Facility.

Works or actions undertaken by subcontractors that fail to meet Facility or documented WHS, Environmental and/or Quality requirements, will be documented and rectified using **IM-REP-1407-003** *Non-Conformance Report- Suppliers and Subcontractors*.

The Facility Coordinator and/or Delegate is responsible for ensuring the Subcontractor addresses non-conformances and any corrective actions in a timely manner.

6.5.3 PURCHASING

The Facility Manager must ensure purchasing is completed in accordance with the requirements of **IM-PRO-0700-003** *Purchasing* and other Facility specific needs to ensure compliance to contractual and applicable specification requirements.

6.5.4 SUBCONTRACTOR & SUPPLIER MANAGEMENT / SURVEILLANCE

Subcontractor and Supplier performance shall be regularly monitored to assess compliance in relation to either their approved site WHS, ENV & Quality Management Plan(s) or the Daracon supplied Integrated Management Plan and associated procedures. Other items that may need to be verified for implementation and effectiveness are as follows:

- Product conformity requirements;
- Specific QA training requirements;
- Inspection and Testing regimes as required by specifications and approved ITP's and/or
- Conformance to any design plans prepared
    - Quality Validation and Verification requirements;

- Safety in Design (SiD) and
- Environmental Work Method.

Subcontractor work activities shall be included as part of the facility *Internal and Second Party Audit Processes*, *Safety Observation* and *Activity Surveillance* processes. Records of these inspections are included in facility records. Details of audits, observations and surveillances completed are included within the monthly report issued to the responsible Divisional Manager for the facility.

Works or actions undertaken by Subcontractors that fail to meet site or documented WHS, Environmental and/or Quality requirements, will be documented and rectified using **IM-REP-1407-003** *Non-Conformance Report- Suppliers.*

Surveillance types and periods for the supply of products and or services subcontracted shall be determined by the Facility Manager throughout the works being completed and the risk introduced.

The Facility Manager is responsible for ensuring the Subcontractor addresses non-conformances and any corrective actions in a timely manner.

6.5.5 EVALUATION OF PERFORMANCE

Subcontractor and Supplier Performance Reports must be conducted at the completion of subcontracted / engaged works. Reports are designed to assess the performance of Subcontractors / Suppliers for future reference & use by Estimators, Purchasing and other Management Teams.

Evaluations of Performance must be completed regularly as detailed above using **FRM.01716** via the online performance report (see quick links on DMS or click the below link)

Subcontractor and Supplier Performance Report

Performance evaluations include criteria on the following aspects of work with the intent to determine whether the subcontractor would be recommended for future works:

- Work Health & Safety Performance;
- Workmanship and Quality Performance;
- Environmental Performance;
- Time Management Performance;
- Communication and Cooperative relations;
- Contract Administration Performance; and
- Subcontractor / Supplier Onsite Personnel Performance.

All submissions placed via the online performance report will be maintained as corporate records and made available to operations as required to assist with future service provider selections.

Registered Subcontractors and Suppliers will be maintained on CHEOPs.

6.6 HAZARDOUS SUBSTANCES

All hazardous chemicals identified as being needed onsite shall be assessed and communicated by the person responsible for procurement of such hazardous chemicals to the Daracon Supervisor and/or HSEQ Representative responsible for the works prior to use and storage onsite.

Hazardous Chemicals used onsite shall be supported by a current Chemwatch or equivalent Safety Data Sheet (SDS) and be included in the Chemwatch Manifest Database (S*ite SDS Register*). Copies of SDSs for all hazardous chemicals shall be available for use and review at the site by workers and other persons.

Supervisors shall ensure suitable signage and storage facilities are used onsite including the separation and storage of Hazardous Chemicals is in accordance with relevant Codes of Practice.

For example:

- Storage & Handling of Dangerous Goods and/or
- Managing the risks of hazardous chemicals in the workplace.

The use of hazardous chemicals will be monitored as part of site compliance process using safety observations and site inspections.

The Supervisor shall ensure that all hazardous chemicals will be appropriately labelled. All waste and non-conforming materials and chemicals shall be disposed of into designated receptacles or at a licensed facility.

Sites must consider **PRO.008** *Fitness for Work and Injury Management* when working with hazardous chemicals to ensure statutory health surveillance requirements are met.

6.7 ISOLATION OF HAZARDOUS ENERGY

Isolation of Hazardous Energy on this Facility shall be completed in accordance with **IM-PRO-0402-001** *Isolation* where applicable to typical Daracon works prescribed in the procedure.

Where isolation of hazardous energy extends to infrastructure not owned by Daracon, such assets and infrastructure is to be isolated in accordance with the asset owner / energy provider (e.g. Hunter Water, Ausgrid and/or Jemena).

Workers and Visitors to the Facility shall not isolate plant and/or equipment unless they are suitably qualified and trained to do so.

6.8 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Daracon will ensure that all workers have access to required Facility PPE so as to comply with safe work practices at the Facility. Task specific PPE other than the mandatory items (where required for work activities) will be included within SWMS for each activity. All persons shall be informed of their obligations in relation to PPE at the time of their induction to Facility.

The following items of PPE are mandatory on this Facility when working or walking in operational work areas:

- Safety Glasses and *not Sunglasses* must be worn (clear or tinted) compliant to AS/NZS 1337:1992;
- Long / Longs (long pants and long sleeved) safety clothing;
    - Shirts to be fitted with retro reflective stripes;
    - Personnel may wear a suitably compliant high visibility vest (*closed at the front*) over a non-high visibility long sleeve shirt.
- Lace up, ankle high, steel capped safety boots shall be worn at all times and
- Suitable safety or chemical resistant gloves as applicable to the work activity being undertaken.

The Facility team must supervise, complete Facility inspections and safety observations to ensure compliance to Facility and activity-based PPE requirements. Purchasing of PPE shall be through approved suppliers only; liaise with the purchasing coordinator or WHS delegate to complete procurement of PPE.

Hard Hats must also be considered for use when working or walking in areas at the Facility which indicate a hard hat is required. The use of a hard hat should also be risk assessed against the type of work being conducted (i.e. when working with or walking in sheds with operational cranes).

- Hard Hat should only be used that are within 2 years from the date of issue where recorded in the hard hat or 2 years from date of manufacture if no issue date is shown;
    - Including the Harness which must be changed within 2 years from date of issue;
    - Consider use of a broad brimmed attachment when working outside and
    - Use a chin strap in windy conditions or where workers are required to work at a height to prevent the hard hat from falling off the workers head.

6.9 PERSONAL ELECTRONIC DEVICES IN WORKPLACES

Mobile phones, smart phones, tablets, and other mobile devices have the potential to enhance operational interactions between key roles, however, the use of mobile devices in the workplace presents risks to worker safety if not used appropriately.

The use of mobile phones during operational works has been limited to personnel who must use PEDs for business purposes to fulfil requirements of their roles. Mobile devices (whether company-issued or personal) must not be used when performing high-risk activities, such as operating or working with plant or equipment.

Subject to requirements of **IM-POL-0209-003** *Telephone Use*, Facility-based managers and supervisors have the authority and accountability to determine how and when mobile devices can be used safely and productively on Daracon work Facilities.

Workers must comply with any reasonable directions given by their supervisor and/or manager, and any additional requirements in place at a client Facility.

Any use of mobile devices in vehicles other than mobile plant shall be in accordance with the relevant road rules for where the vehicle is being operated.

6.10 ENVIRONMENTAL MANAGEMENT

An Environmental Risk Assessment shall be completed as part of the global facility risk assessment to identify and document the aspects and impacts likely to be realised. This assessment is to include an identification of risk controls to mitigate these aspects and impacts.

Daracon will undertake Environmental Monitoring for all conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and Independent audit as detailed in the Approval.

Suitable representative monitoring locations will be used for Noise, Blast and air quality monitoring in accordance with the Approval as shown in the respective appended management plan(s) and/or monitoring program(s). The specific details of the various environmental monitoring locations are shown in the Site Water Management Plan (SWMP), Noise Management Plan (NMP), Air Quality Management Plan (AQMP), Landscape Management Plan (LMP) and Blast Management Plan (BMP). All environmental monitoring points are situated to provide valuable and representative information to assist with the appropriate management of the site and demonstrate compliance with the Approval.

Daracon has developed ***Operational Work Instructions (OWI)*** for significant aspects and impacts as part of its overall management system. OWI instructions are available on the company intranet (DMS) to be used by Facilities when planning for activities that need to apply and/or consider specific environmental controls for works.

Operational Work Instructions may be used by Facility teams for toolbox communications or in training applications during the Facility.

OWIs that are considered to be applicable to this Facility are as follows, but are not limited to:

- OWI.01 Resource & Waste Management;
- OWI.02 Soil and Water Management;
- OWI.03 Flora and Fauna (Biodiversity) Management;
- OWI.04 Air Quality Management;
- OWI.05 Noise Management;
- OWI.06 Vibration Management;
- OWI.07 Working with and Storage of Hazardous Chemicals;
- OWI.08 Facility Rehabilitation.
- OWI.09 Actual and Potential Acid Sulfate Soils (ASS & PASS);
- OWI.010 Community Liaison;
- OWI.011 Contaminated Land Management;
- OWI.012 Aboriginal and Non-Aboriginal Heritage;
- OWI.013 Flood Management;
- OWI.014 Management of Public Safety;

Compliance to applicable controls specified in the OWIs shall be measured as part of the Facility auditing and inspection processes. Specific controls from OWIs that are applicable to the works being completed at a Facility shall be included in the activity specific risk assessment (i.e. SWMS) and communicated to workers completing the tasks.

6.10.1 WATER MANAGEMENT AND POLLUTION PREVENTION

Management of water associated with the Facility is considered a significant aspect of this Facility and therefore a Site Water Management Plan (SWMP) has been developed that forms part of the overall IFMP. The SWMP in addition supports the development of erosion and sediment control plans and is available within **APPENDIX 4** of the IFMP.

6.10.2 FLOODING

The risk of flooding on this Facility has been assessed as Low. Daracon will maintain good practice by ensuring the location and storage of materials, plant and/or other Facility equipment are considered to minimise the impacts so far as reasonably practicable from any unsuspected flooding or inundation.

6.10.3 EROSION & SEDIMENT CONTROL PLANS

Erosion & Sediment Control Plans (ESCPs) should be completed for Facilities where permanent hard ESC controls are not installed as part of the facility infrastructure. ESCPs are developed to assist the Facility in mitigating pollution risks associated with potential discharges of dirty waters that may negatively impact on the surrounding environment. These will be included in the SWMP.

ESCPs should be reviewed and updated where controls have changed on the Facility significantly. ESCPs should not be left without review for longer than a period of twelve (12) months.

The EQ Manager shall be consulted regarding the development and approval of ESC Plans.

6.10.4 RESOURCE & WASTE MANAGEMENT

Waste disposed from Facility should be recorded on **IM-FOR-0510-001** *Waste Management Record* and/or on Supplier provided reports where provided as part of waste supply service agreements. These records shall then be maintained as Facility records.

Details of disposal locations, quantities, methods of disposal and units of measure are set out within the waste record. Waste shall be separated according to the classification of waste where practicable and disposed of as per its classification (and in accordance with the EPA Waste Classification Guidelines where applicable). The transportation of waste dependent on the type may either be undertaken by Daracon employees or where required by regulations a licensed Contractor shall be used.

Where cost and performance allow the Facility to do so, consideration for the use of products containing recycled content may be used on this Facility and reported on accordingly.

Avoidance, re-use and recycling are important waste avoidance mechanisms to ensure the principals of waste minimisation are applied. These mechanisms will be applied as part of the operation of the facility.

6.10.5 SENSITIVE AREAS

Environmentally sensitive areas associated with the Facility will be identified on sensitive area maps where applicable. These maps shall be communicated to persons as part of the Facility-specific induction process where applicable. Sensitive areas may be any of the following areas but are not limited to:

- Endangered Ecological Communities (EEC);
- Threatened Fauna;
- Environment Protection Biodiversity Conservation (EPBC) Act-listed migratory Fauna and/or
- Aboriginal or Non-Aboriginal Heritage.

6.10.6 NOXIOUS WEEDS

Noxious weeds that are identified and disturbed within the Facility shall be managed and controlled for disposal as per the treatment requirement for the specific weed type.

- See the Department of Primary Industries (NSW Weedwise) web.

6.10.7 PATHOGENS

Controls to mitigate the risk of introducing and spreading pathogens caused by works at the Facility; including hygiene protocols and monitoring arrangements where required will be recorded and managed accordingly.

6.10.8 COMMUNITY ENGAGEMENT

The Facility currently operates a Community Consultation Committee (CCC) which is chaired and facilitated by an independent and approved consultant. The Facility Coordinator and/or CCC Facilitator are to ensure that external consultation processes are implemented where required on this Facility and ensure relevant stakeholders are notified where needed. Formal meetings shall occur twice a year with notes taken and uploaded to the Daracon website.

Daracon commits to the continuous operation of the CCC in accordance with the Approval and the Department's Community Consultative Committee Guidelines: State Significant Projects (2019).

6.10.9 MANAGEMENT OF NOISE & VIBRATION

Impacts from noise and vibration on the Facility will be mitigated by ensuring receivers and other aspects where applicable are identified, including the application of specific control measures in each case that will consider the following but are not limited to:

- Those detailed in the Noise Management Plan (NMP in **Appendix 5**);
- Those detailed in the Blast Management Plan (BMP currently under review and to be provided to DPIE for approval prior to recommencing blasting on site);
- Consultation & notification measures (internal and external);
- Identification of sensitive receivers;
    - *Including Building Condition Inspection Reports where required*.
- Mitigation measures;
- Noise & Vibration Monitoring and reporting requirements as detailed in the Approval;

6.10.10 AIR QUALITY MANAGEMENT

To manage risk associated with dust, offensive odours, and other air pollutants the Facility will review the following aspects as a minimum to ensure suitable controls are implemented:

- Those detailed in the Air Quality Management Plan (AQMP in **Appendix 6**);
- Identification of sensitive receivers where applicable;
- Mitigation measures with an aim to restrict dust generation to below 4gm/m^2 per month during construction;
- Greenhouse Gas Emissions;
    - Consideration to be given to reducing carbon emissions by using alternative fuels and other power sources for increased energy efficiencies where practicable and
- Monitoring & Reporting requirements as detailed in the Approval.

6.10.11 CONTAMINATED LAND

Due to the scope of works being completed on this Facility there may be a risk of land contamination through realisation of unplanned events. To mitigate the risk associated with contaminated lands, The Facility Coordinator and/or Delegate must ensure all spills are recorded and corrective actions are identified and closed out in a timely manner.

Records will be recorded in the Facility specific folder for future reference if needed.

6.10.11.1 SPILL RESPONSE

Spills will be prevented so far as reasonably practicable by good practices in maintenance, handling, storage, and transportation of hazardous and/or toxic substances. If a spill does occur, Daracon will manage in accordance with the relevant Emergency Response Procedure for the Facility.

Ensure suitable testing of material is completed where required prior to the disposal of spill waste to ensure classification of waste is achieved (and in accordance with the EPA Waste Classification Guidelines where applicable).. Where Facility management personnel are unsure on the required treatment and disposal controls; consultation with the EQ Manager must occur to determine Facility specific requirements.

Spill kits will be located on Facilities and will be stored in areas where hazardous storage, servicing and refueling takes place. In general, spill kits and shall contain the following as a minimum:

- Absorbent material
- Hydrocarbon Booms
- Adsorbent pads and
- Contaminated Waste bags.

Spill kits shall be inspected and maintained as part of the Environmental Inspection Report process using ***IM-REP-0503-001***.

6.10.12 FACILITY REVEGETATION AND STABILISATION

To minimise erosion the Facility intends to progressively rehabilitate (stabilise) disturbed areas that may include the following items:

- Those detailed in the Landscape Management Plan (LMP in **Appendix 7**);
- Soil remediation and clean up as necessary;
- Topsoiling and seeding;
- Weed Control;
- Planting and watering and/or
- Other maintenance tasks for revegetation works.

6.11 MANAGEMENT OF PUBLIC SAFETY

As part of the Global Risk Assessment for Facility works, consideration shall be given to that of public safety for members of the community that may interact with the Facility to ensure business continuity.

Additionally, as detailed in Section 5.4 and included as Appendix 3, the site Traffic and Transport Management Plan (TTMP) provides substantial additional information regarding vehicular movements (and public safety) to and from the Facility through the township of Ardglen.

6.12 EXTERNAL COMPLAINTS

Where external complaints are received about Facility activities; the Facility Coordinator and/or Delegate and Asset Manager is to be notified immediately. Management of external complaints shall be managed as follows:

- Conversations with a complainant shall be recorded using Interview Record ***IM-FOR-0800-001;***
- Details of the complaint and complainant are to be recorded using the Immediate Incident Notification Form ***IM-FOR-0306-001***;
- Notification to Senior Management as relevant to the complaint type;
- Report to the relevant Regulatory authority as required in the Approval;
- Respond to the complaint accordingly;

6.13 FACILITY SUSTAINABILITY

All Daracon Facilities will consider sustainable design initiatives where reasonably practicable and financially suitable for its operations. Daracon will consider the following sustainability principles during the lifecycle of its facilities aimed at reducing its impact on the environment and overall operating costs:

- Energy efficiency;
- Waste avoidance and minimisation;
- Water Efficiency;
- Protection of Ecology and
- Indoor air quality enhancement
    - This includes but is not limited to improved air quality, temperature within physical office space, visual amenity, and pollutants.

7 FACILITY MAINTENANCE

Daracon will ensure a maintenance strategy and a supporting maintenance program is in place, specifically around ensuring critical assets are managed and protected.

7.1 PLANNED MAINTENANCE

Daracon will utilise Smart Asset to register infrastructure and assets to clearly outline planned maintenance including but not limited to the following:

- Facility items that need servicing;
- Inspection and testing regimes;
- Maintenance Periods for items requiring routine servicing and
- Records of maintenance programs completed including who has undertaken and is engaged to continue maintenance tasks.

Other general routine maintenance tasks will also need to be identified and managed by the Facilities Coordinator and/or delegate including who is required to undertake tasks and when.

7.2 PUBLIC INFRASTRUCTURE

Daracon commits to the following public infrastructure repair and maintenance aspects in accordance with the Approval:

- Repair, or pay reasonable costs to repair public infrastructure damaged by the development if required;
- Relocate, or pay all reasonable costs associated with relocating any public infrastructure that needs to be relocated as a result of the development if required;
- Maintaining the quarry access route (New England Hwy to site) until the cessation of quarrying operations on the site, to the satisfaction of Council.

7.3 UNPLANNED MAINTENANCE

Maintenance that occurs onsite at the Facility due to breakdowns and/or performance-based issues shall be maintained by competent Daracon workers and/or specialised contractors engaged in accordance with **IM-PRO-0703-001** *Subcontractor & Supplier Management*.

8 PLANT & EQUIPMENT RESOURCES

Plant & equipment being used shall be done in a manner that considers the following critical aspects to ensure safe operation at this Facility.

8.1 DELIVERY TO FACILITY

Delivery requirements and restrictions (i.e. road permits and hours of travel) shall be considered when planning for and engaging Daracons internal plant department or other external providers for the supply and delivery of plant and/or equipment. Where possible approved travel routes and Facility maps (as detailed in the TTMP) should be provided to suppliers of plant and/or equipment to prevent accidents or incidents occurring during delivery. Planning must take into consideration applicable safety, environmental and CoR requirements.

8.1.1 SUBCONTRACTOR PLANT DELIVERY

Subcontractor plant and equipment must be in a safe & serviceable condition to be used at the facility. All subcontracted plant and/or equipment engaged for site shall have a Pre-Delivery Plant Inspection completed by a qualified person; either from the Subcontractor / Supplier and/or Daracon. The documentation should then be reviewed for suitability by a member of the facility management team & accepted prior to use using ***IM-FOR-0401-001***.

All plant delivery records shall be obtainable and recorded within the ***'Plant Docs'*** Dropbox Folder.

8.2 OPERATOR ENGAGEMENT

Plant & equipment operators will be trained and authorised to operate plant and/or equipment in accordance with **IM-PRO-0201-001** *Identifying Training and Competency Requirements* and **IM-POL-0202-001** Training Management.

In summary Facility teams should ensure the following is completed at a minimum:

- Ensure the worker completes the Facility-specific induction;
- Ensure the worker has the required qualifications and/or training for the item of plant / equipment that they are being engaged to use at the Facility and
- Ensure the worker has been assessed as competent by a suitably qualified person.

Records of Daracon Operator competencies will be accessible and maintained within the companies training management database.

Subcontractor records shall be maintained by the Training Department.

8.3 SAFE OPERATION OF PLANT

Plant risk assessments must be developed and communicated to workers / plant operators prior to the commencement of works at the Facility in accordance with **IM-PRO-0301-001** *Risk Management* including the following:

- Safe Work Method Statements (SWMS) applicable to the activity in which plant operation is planned to occur and
- A Plant Risk Assessment (PRA) using **PT-FOR-0301-001** to identify critical systems for the safe use and maintenance requirements of plant.

Daracon commit to operating all plant and equipment in a proper and efficient manner.

8.4 PLANT & EQUIPMENT SERVICEABILITY / MAINTENANCE

Daracon commit to maintaining all plant and equipment in a proper and efficient manner. Only plant and equipment that is in a serviceable condition will be used at the Facility. All equipment used at the Facility will be inspected daily before use using **PT-CHK-0401-001** *Daily Mobile Plant Inspection Checklist*.

Defects where applicable, are to be marked and actions taken as directed on the checklist such as:

- **Category "A" Items (*Unsafe to Use*)** – Plant must not be operated; the Supervisor must be notified immediately, and the plant must be placed out of service.
- **Category "B" Items (*Safe to Use – Conditional*)** – Plant must not be operated unless fault is reviewed and assessed as being safe to operate in consultation with the Facility Supervisor or Fitter.

Plant shall be taken out of service for faults that have the potential to impact on the safe operation of plant and/or equipment. Repairs must be completed by a suitably qualified person or apprentice where permitted and supervised. This requirement also applies to hired plant and equipment used by Daracon personnel and its Subcontractors. For Subcontractor plant & equipment, suitable repairs shall be arranged promptly with the relevant owner.

Maintenance activities will be programmed and completed by Daracon or its Subcontractors in accordance with manufacturers requirements and/or other scheduled servicing requirements depending on the type of plant and/or equipment being maintained.

Subcontractors will be required to provide regular updated evidence of plant maintenance records. To maintain currency of information Daracon should also request maintenance history during claims and invoicing periods for plant currently on site.

Any plant maintenance or service history provided to facilities by subcontractors and/or suppliers must be uploaded into the **'Plant Docs'** ***'Submissions'*** folder.

Daracon will ensure maintenance of pressurised systems is completed in accordance with applicable maintenance schedules. Pressure vessels will be maintained in accordance to their relevant Australian Standard and manufacturers' requirements.

Servicing and/or other records for plant items will be maintained by the Maintenance Manager using Smart Asset and is accessible by the Facility team upon request.

8.4.1 MAINTENANCE MANAGEMENT

Daracon Group operates a fleet of prime movers, trucks and trailers used to transport construction material and equipment that will be utilised at this Facility. Maintenance completed on this type of equipment will be completed in accordance with the documented policy and procedures for Chain of Responsibility (Heavy Vehicle Management).

8.5 OTHER VEHICLES

All other vehicles operated on Facility shall be compliant with the Facility-specific requirements and should have a visual inspection completed daily prior to use to identify any defects that could impact on the safe operation of the vehicle.

Any defects identified should be verbally reported to the Maintenance Department and recorded using **PT-FOR-0401-002** *Vehicle Repair Request*.

8.6 PLANT COMPLIANCE

Plant & equipment being used at this facility shall be monitored for compliance daily using Plant Pre-starts completed by Plant Operators. In addition, site inspections and other surveillance / observations will be completed as required.

8.7 PLANT COMISSIONING

Daracon does not typically engage in plant commissioning activities. Where plant commissioning is required on site to allow for mobile and/or other fixed plant to become operational for delivery; suitably qualified persons shall be engaged to ensure commissioning is completed in accordance with statutory and regulatory requirements.

Facilities who are responsible for coordinating operational plant installations or erections as part of the commissioning process must ensure the following at a minimum is managed during the works:

- Sufficient clear working areas are maintained around the plant (i.e. exclusion zones, signage and barricading as required;
- Ensure the layout of plant does not affect access and/or egress to and from the workplace;
- Ensure the plant is not brought into operation unless the commissioning process is provided to Daracon and a suitably qualified person has been engaged to approve the plant installation and/or erection and
- Inspections are completed regularly by Supervisors and site management personnel to ensure that risks associated with commissioning activities are monitored and controlled effectively in accordance with the site requirements and environmental conditions.

8.8 PROTECTIVE STRUCTURES (ROPS / FOPS)

To ensure plant machinery is safe for its intended use in relation to protective structures the following minimum requirements must be reviewed by a competent person to ensure applicable mitigation measures are existing on plant.

8.8.1 EARTHMOVING MACHINERY

All earthmoving machinery designed to have a mass of 700 kg or more, but less than 100,000 kg must comply with the following in relation to protective structures:

- If the machinery was manufactured, imported, or originally purchased after 1989, it must be securely fitted with a protective structure that conforms with AS 2294.1, AS 2294.2 and AS 2294.3 Earth-Moving Machinery – Protective Structures; **or**

- If the machinery was manufactured, imported, or originally purchased during or before 1989, it must be securely fitted with:
    - A protective structure that conforms with AS 2294.1, AS 2294.2 and AS 2294.3 **or**
    - If such a structure is not available, an alternative protective structure designed by a suitably qualified engineer having regard to the performance requirements of AS 2294.1, AS 2294.2 and AS 2294.3 must engineered and installed.

8.8.2 TRACTORS

All tractors designed to have a mass of 560 kg or more, but less than 15,000 kg must comply with the following:

- If the tractor was manufactured, imported, or originally purchased after 1981, it must be securely fitted with a protective structure that conforms with AS 1636.1, AS 1636.2 and AS 1636.3 Tractors-Rollover Protective Structures – Criteria and Tests; **or**
- If the tractor was manufactured, imported, or originally purchased during or before 1981, it must be securely fitted with:
    - A roll-over protective structure that conforms with AS 1636.1, AS 1636.2 and AS1636.3 Tractors- Roll-over Protective Structures – Criteria and Tests; **or**
    - If such a structure is not available, an alternative roll-over protective structure designed by suitably qualified engineer having regard to the performance requirements of AS 1636.1 must engineered and installed.

8.8.2.1 PROTECTIVE STRUCTURE IDENTIFICATION

The protective structure at a minimum must be identified with information as required by the following standards where applicable and against whichever is appropriate for the type of machinery:

- Earthmoving Machinery - AS 2294.1, AS 2294.2 or AS 2294.3; **or**
- Tractors - AS 1636.1.

Exclusions:

Subject to the conditions set out below, the following types of machinery are excluded from this section to fit operator protective structures that conform with AS 2294:

- Road rollers or compactors with a mass of 2,700 kg or less
- Paving machines;
- Earthmoving equipment that is designed to be operated by an operator in a standing position.
    - These include profilers, stabilisers, materials transfer vehicles and stand-up loaders and excavators.
- Hydraulic excavators.

The exclusions outlined above may be applied provided that:

- The risks of the earthmoving equipment or objects falling on their operators have been assessed and other means are used to control them.

- The risk assessment must be in writing and the controls should form part of the SWMS;
- The risk assessment must consider variables such as but not be limited to the following:
  - Amount of load;
  - Distribution of load;
  - Speed of machine;
  - Ground conditions;
  - Gradient;
  - Tyre pressures and
  - Steering angle and resistance of object (such as machine's centre of gravity, stiffness of suspension and track width).

- Where a risk assessment indicates that the operator of a hydraulic excavator, including those designed to be operated in a standing position, is at risk from falling objects and/or objects that approach the excavator from the front of the excavator, the machinery must be fitted with a protective structure that conforms with AS 4988;
- Where a risk assessment indicates that compact excavators - those with an operating mass of between 1,000 kg and 6,000 kg – are at risk of tipping over, they must be fitted with a structure that conforms to AS 4987 and/or
- Where a risk assessment indicates that it is necessary to fit machines listed for exclusion with operator protective structures other than those within the scope of AS 4987 and AS 4988, the following must occur:
  - The structure must be designed by a suitably qualified engineer having regard to the performance requirements of the relevant part(s) of AS 2294 and
    - Note - Such a structure would not require deformation testing if the engineer is satisfied that calculations are sufficient to prove its performance.

8.9 CRANAGE AND LIFTING OPERATIONS

Any cranage and lifting operations undertaken on site shall at a minimum be in accordance with relevant legislation, applicable industry standards, codes of practice and the minimum requirements outlined in **OWI.039** *Cranage and Lifting* Operational Work Instruction.

8.9.1 COMPLEX LIFTS

Complex lifts are lifting activities that require additional specific planning for a particular site and set of lifting requirements. A lift is deemed complex when it satisfies any one or more of the circumstances listed in **OWI.039** *Cranage and Lifting*.

Complex lifts shall be undertaken by competent person(s) who are able to demonstrate compliance in the required experience, competence, licences/tickets, safe and compliant plant, and equipment and documented safe system of works.

Lift plans and/or studies shall be developed for all complex lifts and provide details regarding each complex lift. All lift plans and associated planning documentation associated with complex lifts must be approved for use under the **OWI.039-FRM01** *Complex Lift Permit.*

The following items are typically included as part of a Complex Lift Permit considerations:

- Weights of the materials being lifted;
- Lifting methodology and type of support equipment needed;
- Plant needed including WLL and/or SWL of Crane(s);
- Ground conditions required to conduct the lift safely;
- Emergency Response;
- Risk Assessment for Works;
- Resources required and
- Site layout required considering safe access and interface with other works onsite.

8.9.2 GENERAL PRINCIPLES FOR LIFTING AND CRANEAGE

The following principles shall be considered and followed where applicable when preparing for lifting and cranage activities onsite:

- All lifting should be pre-planned;
- Competent persons must be identified and reviewed for suitability based on the type of lift being completed. Examples of competent persons may be as follows dependant on the type of lift:
    - Crane Operator;
    - Appointed Person;
    - Dogman;
    - Rigger and/or
    - Engineer.
- The location of the crane is to be assessed - ensure the crane is on a firm and stable work surface. This may need engineering and geotechnical assessment depending on the lift;
- Prior to setting crane up look for potholes and soft or rough ground, overhead obstructions, personnel working in the area, blind corners, traffic flow and underground services.
- Only lifting equipment designed for the purpose shall be used, and the calculated estimate weight determined so the correct slings or chains can be selected and used;
- After use, all lifting equipment shall be stowed in a designated dry area;
- Personnel must never ride on or be transported by lifting equipment unless it is designed for this purpose;
- Hydraulic jacks must always be supported on flat level surfaces;

- Damaged or faulty lifting equipment must not be used and shall be tagged “OUT of SERVICE” and sent for repairs or replacing by a competent person;
    - Damaged or faulty lifting equipment must be reported immediately to your Supervisor.
- All lifting equipment is to be inspected before use for damage, wear, and tear and that it is correctly tagged and dated and
- All lifting equipment shall be inspected quarterly (or as appropriate depending on site specific requirements) by certified personnel.
    - Any equipment requiring more frequent testing or repairs, notify your direct Supervisor.

8.10 SCAFFOLD AND SCAFFOLDING WORK

All scaffold and scaffolding works will be done in accordance with required regulations, standards, codes of practice and minimum requirements outlined in Operational Work Instruction **OWI.029** *Scaffold and Scaffolding Work*. Scaffold and Scaffolding work shall be assessed for risk and undertaken by a competent person(s) who can demonstrate suitable experience and competence.

9 TRAINING & COMPETENCY MANAGEMENT

All workers must be inducted to the Facility prior to working in any operational work areas. Inductions comprise of the following:

9.1 FACILITY SPECIFIC INDUCTION

The Daracon Facility Specific Induction shall be completed using a digital induction kiosk *(i.e. Sine system at head office)* or, an induction presentation *(typically PowerPoint)* depending on the specific facility setting.

The following information will be communicated at a minimum during the Facility induction with all induction records being maintained at the Facility in an approved file structure.

- WHS hazards and associated controls;
- Environmental Awareness (including aspects of the consent and associated controls);
- Hazard, Incident and Emergency reporting protocols associated with the Facility;
- Work Permits that may be required for tasks at the Facility;
- Minimum PPE requirements for the Facility;
- Plant & Equipment Competency Requirements;
- How an individual's actions and tasks can impact on safe operations and the surrounding environment;
- Duties and obligations as a Worker at the Facility;
- Daracon Facility safety rules;
- Emergency Muster areas and persons responsible for managing emergencies;
- First Aid facilities & First Aiders and
- Traffic, Vehicle and Pedestrian movement plans.

9.1.1 VISITOR PASSES

This facility will issue all visitors who have successfully completed the visitors' induction with a Daracon Facility Visitor Pass (generated by the digital induction kiosk system or a physical visitor pass attached to a lanyard). This will act as a temporary means of verification for Facility personnel to be able to identify any unauthorised or visiting persons at the Facility.

9.2 PLANT COMPETENCY MANAGEMENT

All Daracon Facilities are to only engage competent and experienced workers to perform tasks, specifically the operation of powered mobile plant and/or other equipment. Competency Management for Plant, Vehicles and other Equipment will be done so in accordance with **IM-PRO-0202-007** *Plant & Heavy Vehicle Training & Assessment.*

In line with the above process, Daracon Workers must be trained and assessed on the plant type they are to be appointed to operate at the Facility. Daracon Plant assessments have been developed in accordance with the relevant Resources and Infrastructure Industry (RII) Training Package. All plant operators shall have their training documented on a Record of Competency Assessment (ROCA) for the particular item of plant being assessed against.

Any identified gaps or requests for plant operator training should be arranged in consultation with the Plant Manager. Copies of all plant training records shall be provided to the Plant Manager and the HR Administrator.

9.3 OTHER VEHICLE & EQUIPMENT TRAINING

Where deemed required by Daracon, assessments for non-mobile plant shall be recorded using a ROCA for the particular vehicle and/or equipment item a worker is intending to use at the Facility. Other general training is identified on the Facility as part of the planning process and in accordance with procedure **IM-PRO-0201-001** *Identifying Training and Competency Requirements*.

From time to time there may be activities requiring specialist training that should be risk assessed; where identified these training requirements are to be recorded in the Facility risk assessment using **IM-FOR-0301-002** *Global Risk Assessment*. From this, suitably competent workers will be assigned to the Facility. Activities that may require specialist training include, but are not limited to:

- Traffic Control;
- First Aider;
- Dogman;
- Rigger;
- Worker required to work at a height;
- Confined Space Worker;
- Crane Operator;
- Forklift Operator and
- Working near Overhead Powerlines.

Where any external training is necessary the responsible manager shall book training through the relevant training representative.

9.4 SUBCONTRACTOR COMPETENCY MANAGEMENT

Subcontractors engaged to provide services that require the operation of Mobile Plant on Daracon operations will be requested to complete the **FRM.01103** *Subcontractor Plant VOC* form for each operator and provide to Daracon prior to subcontractor operators conducting any work onsite. Where **FRM.01103** *Subcontractor Plant VOC* is not received prior to the operator arriving onsite, site representatives must ensure they sight the Operator's competency prior to allowing the operator to commence works in mobile plant.

Competencies may be any one or more of the following:

- Statement of Attainment;
- Licence or Certificate of Competency and/or
- Evidence of formal VOC (against defined competency standards)

Daracon will maintain the majority of relevant subcontractor documents such as training records, licences and/or any certificates of competencies which will be accessible by Daracon personnel. Any relevant records held off site (*i.e. by the plant department*) must be made accessible to Daracon facility representatives as required.

Subcontractors engaged by the facility (*i.e. not by the plant department*) that will provide machinery, equipment and/or other vehicles as part of their service to a facility must be managed by the site representatives. This is to be managed by ensuring site representatives sight applicable competencies prior to commencing works onsite.

If plant hire is engaged by the facility, records of competencies and other pre-qualification information shall be provided to the Plant Department.

Where deemed a requirement by Daracon, and dependent on risk exposure, subcontractor assessments for non-mobile plant items may be recorded for vehicles and/or equipment items a subcontracted worker is intending to use at the facility.

Any new subcontractor records obtained for work at a facility through direct engagement (*i.e. not by the plant department*) must be provided electronically to the relevant division (*i.e. Plant or Transport*).

10 INCIDENT MANAGEMENT

All reporting and management of incidents and/or accidents that occur at this facility shall be managed in accordance with **PRO.014** *Incident & Corrective Action Management* and the consent (Mod 2);

- Also see Corrective and Preventive Action - **IM-PRO-1407-002** (current procedure) and
- Also see **IM-PRO-0306-001** Incident Reporting and Investigation (current procedure).

Where an incident occurs, the appropriate immediate response will be taken to ensure the safety of workers, the community, and the environment. Severity of the incident is to be categorised by the actual and potential risk.

10.1 IMMEDIATE INCIDENT MANAGEMENT

Where an incident is identified to have occurred the following process should be followed dependant on the circumstances:

- Cessation of work activity being conducted;
- Make the workplace safe and or contain / isolate the incident area and/or spill;
- Report incidents as per **Clause 10** of the IFMP;
- Notify adjacent residents if required in the Approval;
- Notify the DPIE if required in the Approval;

The Supervisor, Leading Hand and/or other person responsible for the work activity must ensure that the above process is implemented effectively.

10.2 REPORTING OF INCIDENTS

Incidents must be verbally **reported immediately to the facility management team in the first instance** in accordance with **PRO.014** *Incident & Corrective Action Management*;

- Also see Corrective and Preventive Action - **IM-PRO-1407-002** (current procedure);
- Also see **IM-PRO-0306-001** Incident Reporting and Investigation (current procedure);
- 06_0264 (Mod 2) consent regarding notification of Regulatory authorities and local residents;

The *Incident reporting flowchart* **(PFC.01401)** which is displayed prominently in the site office and on meals room walls. The incident reporting procedure will also be covered in the site induction.

Importantly, notification to one of the following delegates depending on the type of incident shall occur;

- Facility Manager (All Incidents);
- Group Environment & Quality Manager – All Environmental Incidents and serious Quality issues relating to non-conforming products or works;
- Group WHS Manager – All Safety Incidents and/or
- Senior Management (should be applicable to the operating division / aspect of the business).

The above responsible persons will then be required to engage other Agencies (e.g. SafeWork NSW, NSW EPA, DPIE and/or the ONRSR) as required under the Approval.

All incidents reported from the facility will be recorded on a corporate database which is accessible by Facility Managers upon request. All other records of incidents are to be filed within facility records onsite.

10.2.1 NOTIFIABLE INCIDENTS

A notifiable incident shall be reported to the DPIE or regulator by the Group HSEQ Manager (or designee) only after becoming aware of such.

A WHS notifiable incident is considered as per the following in accordance with SafeWork Australia Incident Notification Information Sheet:

- A Death of a Person;
- A Serious Injury or Illness or
- A Dangerous Incident.

In the event that a notifiable incident occurs the Group WHS Manager will advise the facility staff if the area is to remain undisturbed to allow an investigation to be completed.

Refer to the SafeWork Australia Incident Notification Information Sheet for further detail on what criteria applies to each of the above classifications.

An environmental notifiable incident (such as an environmental monitoring exceedance or complaint) will be managed in accordance with these process and the Approval with the relevant authorities and community members notified in the timeframes listed in the Approval.

10.2.2 POLLUTION INCIDENT RESPONSE MANAGEMENT

A pollution incident for the purpose of this plan is considered an incident, or set of circumstances during, or as a consequence of which, there is or is likely to be a leak, spill or other escape or deposit of a substance as a result of which pollution has occurred, is occurring or is likely to occur.

Pollution incidents may include a single incident or a set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

If a pollution incident results in ‘material harm’ to the environment, the facility team must be aware of what defines ‘*Material Harm*’ under the Act to ensure the appropriate response is initiated from site management; this is identified below:

- *If the actual or potential harm to the health or safety of human beings or ecosystems is not minor.*
- *If actual or potential loss or property damage (including clean-up costs) associated with a pollution incident exceeds $10,000.*

Incidents that result in material harm must be reported to the EPA Regional Manager (and/or EPA Pollution Line on 131 555) immediately.

All incidents shall be managed in accordance with **PRO.014** *Incident & Corrective Action Management;*

- Also see *Corrective and Preventive Action* - **IM-PRO-1407-002** (current procedure) and
- **IM-PRO-0306-001** *Incident Reporting and Investigation* (current procedure) and respective operational management plans.

In addition to process requirements following an incident, particular incidents may cause an emergency situation to be realised. As such, all incidents must be assessed based on the specifics of the particular incident whilst considering the potential for escalation to an emergency in accordance with **PRO.015** *Emergency Management*.

10.3 STAKEHOLDER INCIDENT REPORTING

All reporting of incidents needs to be communicated directly to the Facility Manager immediately after becoming aware of an incident and prior to calling any of the below external stakeholders unless otherwise required to do so. Incident reporting and relevant Information must be provided to the appropriate regulatory authorities as per the requirements outlined in the relevant legislation.

TABLE 4 – EXTERNAL AUTHORITIES CONTACT DETAILS

Authority	Contact Person	Position	Contact Details
Office of Environment & Heritage	Hotline Number	OEH Representative	131 555
SafeWork NSW	Hotline Number	SafeWork Representative	13 10 50
EPA Pollution Line	Hotline Number	EPA Representative	131 555
Council	Liverpool Plains Shire Council (LPSC) representative	LPSC representative	(02) 6746 1755
Resource Regulator incident notifications	Hotline number	N/A	1300 814 609
Fire and Rescue NSW	Hotline number	Fire and Rescue Representative	1300 729 579
DPIE	Contact email	N/A	compliance@planning.nsw.gov.au

10.4 INCIDENT INVESTIGATION

Where an investigation is required based on the level and type of incident that has occurred; all investigation findings and corrective actions must be completed in accordance with **PRO.014** *Incident & Corrective Action Management*;

- Also see Corrective and Preventive Action - **IM-PRO-1407-002** (current procedure) and
- Also see **IM-PRO-0306-001** Incident Reporting and Investigation (current procedure).

Investigations are to be documented on either of the following documents:

- WHS Incident - Incident Investigation Report ***IM-FOR-0306-002***;
- Environmental Incident - Environmental Incident Investigation Report ***IM-REP-0501-002*** or
- Quality Non-Conformance – see **Clause 13.7** of this plan.

Incident Investigations shall be completed by suitably qualified persons preferably with competencies in investigations and only where nominated by the Facility Manager and/or delegate. The Facility Manager and/or delegate shall ensure corrective actions are closed out in accordance with agreed timeframes identified within the investigation report. The relevant Regulatory authorities and community members shall also be made aware of the investigation outcomes as required in accordance with Approval..

11 COMMUNICATION & CONSULTATION

Within 3 months of the approval of any plan/strategy/program required under the Approval (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this Approval, Daracon will:

(a) provide a copy of the relevant document/s to the relevant agencies (as detailed within each specific Management Plan such as NMP, AQMP etc) and CCC; and

(b) put a copy of the relevant document/s on its website (as detailed within each specific Management Plan such as NMP, AQMP etc);

During the development, the Daracon will:

(a) include a copy of this consent, as may be modified from time to time, on its website;

(b) provide a full summary of monitoring results required under this consent on its website; and

(c) update these results on a regular basis (at least every 6 months).

Additionally, ongoing consultation arrangements for this facility shall include as a minimum:

- Facility inductions
  - Prior to entering the facility.
- Daily pre-start briefings (operations);
  - ‘Daily’ prior to the commencement of the shift.
- Monthly Toolbox meetings;

- ‘Weekly’ where WHS / ENV or other site related topics require consultation and communication with the workers onsite.

- Site noticeboard;
  - To be updated weekly with site toolbox talks and/or other related information (*e.g. Alerts, Committee Consultation, Key Lessons Learnt*) by the WHS Manager and/or Environmental Site Representative.
- Display Documents
  - Display documents will be displayed on site in a prominent location to communicate important information
- Risk assessment and work method reviews;
- Community Consultation Committee (CCC) as detailed in the Approval;
- Annual reporting in accordance with the Approval;

All workers and facility staff are to attend the daily and weekly toolbox sessions. Refer to Daracon Consultation and Communication Procedure ***IM-PRO-0303-001*** and further details following.

Note: Communication and Consultation processes listed above are intended to be disseminated by the Site Supervisor and/or other Facility Management team member.

11.1 CORPORATE WHS COMMITTEE

Daracon and its Workers have elected to have a Corporate WHS Committee that meets on a bi-monthly basis and is comprised of peer elected representatives. This forum allows workers and management to share vital information regarding WHS and other related issues; including any potential system changes.

Elected Health & Safety Representatives (HSRs) are to liaise with workers on this Facility to identify any issues from the workgroup and provide feedback on proposed changes. Information regarding the schedule of Corporate WHS Committee meetings and work group representatives can be found on Daracons Display Documents.

Also see DMS for **FRM.00908** *Daracon Group WHS Committee and/or* **PRI.00902** *WHS Committee Consultation Statement* for more information.

11.2 FACILITY SPECIFIC WHS COMMITTEE

A Facility Specific WHS Committee may be formed where it is identified as needed by Daracon or if:

- Requested by a HSR and/or
- Requested by 5 or more workers.

If such a committee was elected, members would be representing Facility based workers only relating to WHS concerns; allowing workers to have input and contribute to the decision-making process on matters affecting the means in which work is carried out on the Facility.

11.3 FACILITY HEALTH & SAFETY REPRESENTATIVE

A Facility Health & Safety Representative (HSR) may be elected by the Facility workforce as the nominated person to take Facility safety issues to Facility management in the first instance, or higher if necessary, for consultation and discussion.

A toolbox talk should be held to explain the role of the HSR when establishing whether the workforce require nomination of such. Workers should be asked to nominate (or volunteer themselves) to be the HSR if they feel this type of representation is needed on the Facility.

The name of any nominated HSR will be displayed on site in a prominent location and also highlighted during the facility induction process.

11.4 FACILITY INDUCTIONS

The Daracon Facility Specific Induction shall be communicated as per this IFMP communicating the key WHS, Environmental and Quality objectives and controls for the Facility.

11.5 COMMON AREA DISPLAY DOCUMENTS

Common area display documents comprise of important information relating to the facility, the company and various other related requirements displayed onsite as detailed below.

11.5.1 STANDARD DISPLAY DOCUMENTS

The following documents must be displayed on site in an accessible, prominent, and unobstructed location. Consideration must be given to sites with multiple work fronts to ensure unrestricted access to the information is implemented. The most current template documents are available through the DMS for download and print and should be arranged neatly as per the illustration below.

- Code of Conduct;
- Company Policies;
    - Work Health & Safety Policy;
    - Environmental Management;
    - Quality Management;
    - Drug and Alcohol;
    - Respect in the Workplace and
    - Fitness for Work.
- **FRM.00908** *Daracon Group WHS Committee Members*;

- **PFC.00901** *WHS Issue Resolution Process;*
- **PFC.01401** *Incident Reporting & Investigation;*
- SafeWork NSW – If you get injured at work (iCare) and
- Industrial Relations Poster.

FIGURE 2 – STANDARD DISPLAY DOCUMENTS LAYOUT

11.5.2 SITE SPECIFIC DISPLAY DOCUMENTS

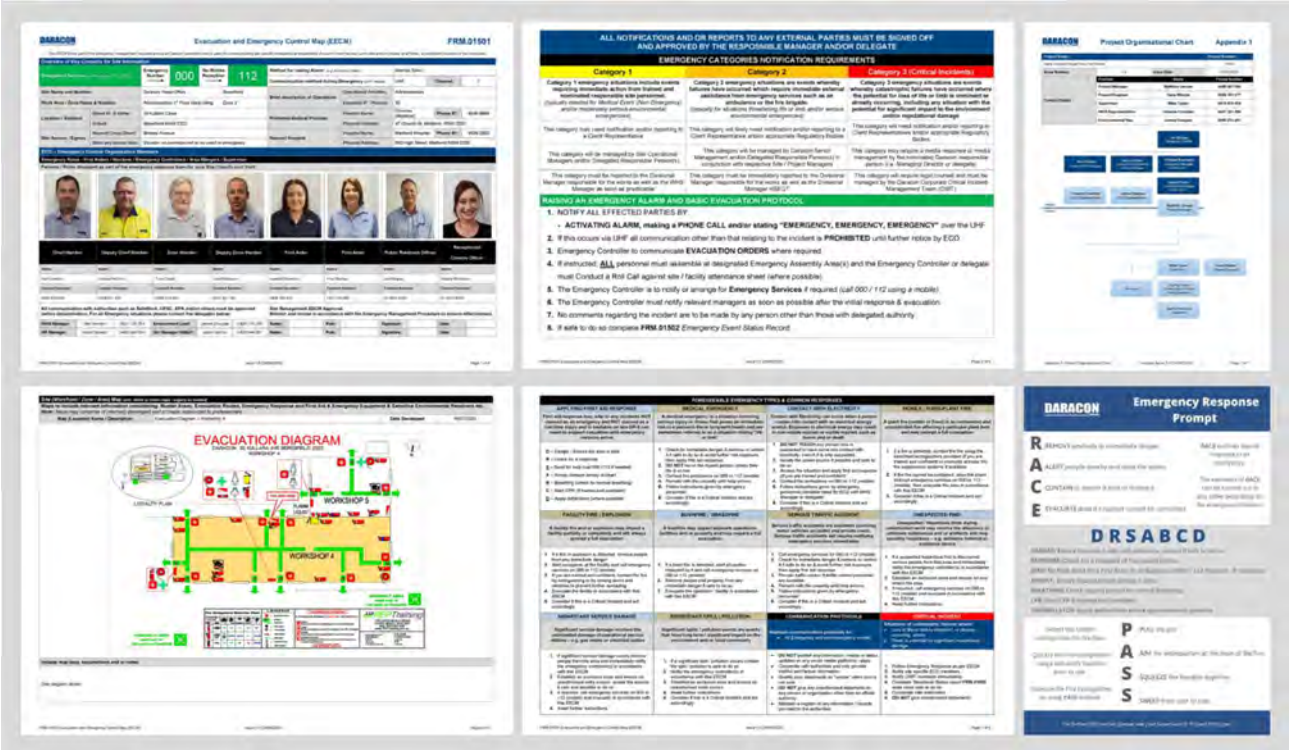
The following site-specific documents (if applicable) must be displayed on site in an accessible, prominent, and unobstructed location. Consideration must be given to sites with multiple work fronts to ensure unrestricted access to the information is implemented. The most current template documents are available through the DMS for download and print and should be arranged neatly as illustrated below.

Note: Additional site-specific display documentation may be added as required.

- **FRM.01501** Evacuation and Emergency Control Map EECM *(and other EECM Minimum requirements that include the below):*
    - Overview (first aid, Eco controllers and other stakeholders);
    - Emergency Notifications & Categories;
    - Foreseeable Emergency Types & Common Responses;
    - Site layout with muster points and
    - Directions to nearest hospital *(if applicable).*
- Emergency Response Prompt Poster;
- Facility Organisational Chart *(IFMP Appendix 1);*
- Vehicle Movement Plan(s);

- Pedestrian Movement Plan(s) *if applicable and*
- Sensitive Area Map(s) *if applicable.*

FIGURE 3 – SITE SPECIFIC DISPLAY DOCUMENTS ARRANGEMENT



11.6 PRE-SHIFT BRIEFINGS

Managers responsible for work undertaken in the Facility that involves high risk construction work or other activities that may impact on the safety of workers, shall ensure Pre-shift briefings are carried out prior to the commencement of each shift by the responsible Supervisor for the works. Pre-shift briefs must detail the activities planned for the shift inclusive of any foreseen hazards that may be encountered.

All persons that present to work at the Facility for the shift must attend this brief and acknowledge information presented by the Supervisor by signing the attendance sheet using Consultation Record ***IM-FOR-0303-001***.

11.6.1 SHIFT HANDOVER MEETINGS

Where the Facility requires continual works resulting in multiple Supervisors / Managers being responsible for works (i.e. Dayshift to Nightshift); a suitable handover **must** be completed and documented using form ***IM-FOR-0303-001.***

11.7 TOOLBOX TALK

Toolbox talks are to be completed at a minimum of ***once (1) per Month*** to discuss information relevant to the Facility and/or business about the following scopes but not be limited to:

- Particular work Facility issues such as changes to work processes;
- Incidents, near misses and Key Lessons Learnt;
- Changes to Regulations and
- General safety, quality, and environmental information.

A record of these discussions and those who attended will be recorded on *Consultation Record* **IM-FOR-0303-001**.

11.8 WHS ISSUE RESOLUTION

Where a WHS Issue is raised at the facility it shall be managed in accordance with **PFC.00901** *WHS Issue Resolution Process.*

Workers are to approach site management in the first instance to commence the resolution process and then continue in accordance with the flowchart as required.

11.8.1 LIAISON WITH THE EPA

Where required persons will be available to be contacted by the EPA on a 24-hour basis. The following positions will be made available:

- Facility Manager or Equivalent and/or
- Group Environment & Quality Manager or delegate.

Persons identified in these positions within **APPENDIX 1** of this management plan have the authority to take immediate action to shut down any Daracon related activity at the Facility, and, to effect pollution control measures as needed and/or directed by an authorised officer of the EPA.

11.8.1.1 EPA INSPECTIONS

The Manager and/or Delegate is to immediately notify the EQ Manager of any visit to Facility intended or completed by the EPA. Where the EQ Manager was not present or did not attend, correspondence must be prepared and submitted within one (1) working day of the EPA Facility visit notifying the EQ Manager of the following:

- Purpose of the Regulatory visit;
- Comments made by the EPA;
- Outcome of the visit and
- Any actions being taken by Daracon in response to the EPA visit where applicable.

11.9 ANNUAL REPORTING

By the end of March in each year after the granting of the development consent, or other timeframe agreed by the Planning Secretary, Daracon will submit an annual report to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:

(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current financial/calendar year;

(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:

(i) relevant statutory requirements, limits or performance measures/criteria;

(ii) requirements of any plan or program required under this consent;

(iii) monitoring results of previous years; and

(iv) relevant predictions in the documents listed condition 2(a)-(c) of Schedule 2.

(c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;

(d) evaluate and report on:

(i) the effectiveness of the noise and air quality management systems; and

(ii) compliance with the performance measures, criteria and operating conditions of this consent;

(e) identify any trends in the monitoring data over the life of the development;

(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

(g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.

12 MONITORING & REVIEW

All personnel on this Facility are responsible for Facility safety and environmental compliance. Facility personnel will achieve this by working towards implementing Daracon risk controls and relevant procedures at all times. This includes following Facility-specific safety rules, Safe Work Method Statements and participating in the continual improvement of hazard management at the Facility.

The Facility Coordinator and/or Delegate shall continuously ensure the Facility Management Plan is being implemented effectively by monitoring compliance to the IFMP.

12.1 HAZARD REPORTING

Where hazards are identified they are to be reported to the relevant supervisor for rectification. Hazardous situations whereby immediate action cannot eliminate the hazard, or, the hazard is of a serious nature that works cannot continue must be recorded on a Hazard Report and or a take 5 and be submitted to the supervisor and/or delegate for action.

Hazards shall be assessed by the Facility Manager, Supervisor and person reporting the hazard to determine the level of risk and the response required.

12.2 FACILITY INSPECTIONS

The Facility Coordinator and/or Delegate shall carry out regular inspections of all work areas to ensure WHS and Environmental controls and required processes are being implemented effectively and maintained.

All WHS / Environmental aspects of the Facility shall be monitored at least **Monthly** with results recorded on Environmental Inspection Report ***IM-REP-0503-001***.

The Facility Coordinator and/or Delegate shall be notified of any corrective actions raised from both the WHS / Environmental inspections ensuring findings are communicated to all responsible persons and evaluated for effectiveness before close out.

12.2.1 EROSION & SEDIMENT CONTROL INSPECTIONS

Prior to and after rain events that are expected to or do exceed >10mm (*including periods of prolonged rainfall*); Facility environmental controls shall be inspected by the Supervisor and any necessary maintenance done as soon as practicable. A record of the inspection and maintenance shall be kept on Environmental Inspection Report ***IM-REP-0503-001***.

12.3 SAFETY OBSERVATIONS

Safety Observations (SOs) are to be completed on this Facility by managers, supervisors and HSEQ representatives using ***IM-FOR-0314-001***. SOs will be used to review Facility and company communication processes and safe WHS / ENV work practices. The process will foster engagement of the workforce aimed at improving Facility and overall organisational culture of Daracon and its Subcontractors.

SOs shall be completed in accordance with the requirements outlined in **Table 3** of this IFMP.

Note: Parts 1 & 2 combined from the WHS/EQ Appraisal form using ***IM-FOR-0326-001*** may act as a substitute for the Safety Observation form.

12.4 AUDITING & REVIEW

The implementation of the IFMP and associated sub-plans shall be audited every 5 years using a suitably qualified external auditor in accordance with the Approval.

Prior to 31 December 2012, and every 5 years thereafter, unless the Planning Secretary directs otherwise, the Daracon will commission and pay the full cost of an Independent Environmental Audit (IEA) of the development. This audit will:

(a) be led by a suitably qualified, experienced and independent auditor whose appointment has been endorsed by the Planning Secretary;

(b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Planning Secretary) whose appointment has been endorsed by the Planning Secretary;

(c) be carried out in consultation with the relevant agencies and the CCC;

(d) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and mining leases for the development (including any assessment, strategy, plan or program required under these approvals);

(e) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and this consent;

(f) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the abovementioned approvals and this consent; and

(g) be conducted and reported to the satisfaction of the Planning Secretary.

If DPIE are satisfied that an additional independent review is warranted (other than the 5 yearly IEA described above), within 3 months, or as otherwise agreed by the Planning Secretary and landowner, of the Planning Secretary's decision, Daracon will:

(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to:

(i) consult with the landowner to determine their concerns;

(ii) conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3 of this consent; and

(iii) if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria; and

(b) give the Planning Secretary and landowner a copy of the independent review; and

(c) comply with any written requests made by the Planning Secretary to implement any findings of the review.

Within three months of commencing an IEA, or within another timeframe agreed by the Planning Secretary, we will submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with our response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations.

Daracon will implement the recommendations made from an IEA to the satisfaction of the Planning Secretary as detailed in the IEA response.

Additional Internal Audits may be scheduled for the Facility more frequently in consultation with the Facility Coordinator and/or Delegate. A copy of the internal audit schedule where applicable to the Facility shall be maintained within Facility records.

Audits will be reported upon with audit results being recorded and disseminated to responsible personnel for review, action, and review of effectiveness.

12.4.1 AUDIT CONSIDERATIONS

Audits completed at this facility shall consider the following elements but are not limited to:

- Critical Asset Maintenance;
- Security;
- Contractor / Supplier Management;
- Compliance with the Approval;

12.4.2 REVIEW OF THIS IFMP

The IFMP will be reviewed when a substantial change to the operation of the Facility occurs and/or where results of internal or external audits highlight that a review may be necessary.

12.5 WORKING AT HEIGHTS & EQUIPMENT

During some construction activities, a competent worker may be needed to carry out works at a height that requires the use of working at heights equipment. The worker shall ensure that the following occurs before they commence the following before any working at heights activity commences:

- All requirements outlined in the Daracon Working at Heights Procedure ***IM-PRO-0312-004*** are met where applicable;
- All working at heights equipment is inspected for suitability and serviceability prior to use.

12.6 CONFINED SPACE WORK & EQUIPMENT

All confined space work shall be completed by trained and competent persons only in accordance with the risk assessment for the activity and **IM-PRO-0312-009** *Working in Confined Space*. All equipment used to monitor atmospheric conditions must be calibrated; other equipment must be inspected each time prior to use for serviceability and suitability.

12.7 SLINGING / LIFTING AND LIFTING EQUIPMENT

Supervisors must ensure that any lifting operations undertaken at a Facility are in accordance with relevant legislative requirements and that prescribed within **IM-PRO-0403-001** *Lifting Equipment*.

Supervisors shall be held responsible to ensure that lifting equipment belonging to and used at the Facility is tested and tagged prior to be use. Where requested, lifting equipment is to be made available for inspection within required timeframes. Where lifting equipment has not been tested as per the current period it shall be removed from service and fitted with an '*Out of Service*' tag.

Subcontractors and service providers engaged for this Facility are to ensure any lifting equipment proposed to be used on Facility is tested and clearly tagged in accordance with Figure 3 below.

Lifting and towing equipment is to be inspected on a **three (3) monthly** basis unless otherwise stated by the Client with Non-Destructive testing being completed annually. Equipment items shall be fitted with clear identification that indicates its inspection period status.

Prior to the use of any lifting and slinging equipment, workers responsible for the utilisation of the equipment must complete a physical inspection to identify any potential serviceability issues or product faults that may pose a risk to worker safety.

A register of lifting equipment using ***IM-REG-0403-001*** is to be used for Facility records.

FIGURE 3 – LIFTING EQUIPMENT INSPECTION PERIOD

DECEMBER	JANUARY	FEBRUARY	RED
MARCH	APRIL	MAY	GREEN
JUNE	JULY	AUGUST	BLUE
SEPTEMBER	OCTOBER	NOVEMBER	YELLOW

12.8 ELECTRICAL EQUIPMENT

Daracon carry out electrical inspections on construction Facilities using suitably trained and competent personnel as per the following requirements dependant on the location:

- Every 6 months within workshop areas (AS/NZS 3760:2010);
- Every 5 years for office equipment (not Facility offices) (AS/NZS 3760:2010);
- Portable electrical equipment on hire should be visually inspected prior to each hire / use and tested at not greater than monthly intervals;
    - If portable hire equipment is to remain at the Facility, 3 monthly intervals will apply.
- RCDs shall be tested as per frequencies outline in Table 3 of AS3012.

Daracon will ensure the inspection and testing of electrical equipment includes focusing on the following critical aspects of electrical equipment:

- Any indication that the electrical equipment has been exposed to heat, moisture and/or chemicals;
- Any signs of damage, defects or modifications that are not OEM specified;
- Checking whether all switches and Earth Leakage devices are serviceable;
- Ensuring the conductivity and insulation resistance is correct and
- Checking the safe operation of fitted dead-man switches on hand tools.

Any electrical equipment that is identified as being damaged and/or not suitable for use must be tagged ‘Out of Service’ and removed from the Facility immediately for disposal or repair.

All flexible extension leads are to have heavy duty insulation and be protect during operational conditions by using cable stands or similar device.

12.9 FIRE EXTINGUISHERS

Portable and Wheeled Fire extinguishers shall have six-monthly (6) routine servicing completed in accordance with Australian Standard 1851:2012 unless otherwise required by the Client. A register of fire-fighting equipment is to be provided by the subcontractor engaged for the testing.

12.10 OTHER CRITICAL EQUIPMENT

The below list of equipment that should be inspected prior to being used and/or being put into service at the Facility. These items are considered as critical equipment items on this Facility but are not limited to:

- Workshop Gantry Cranes;
- Wall Jib Cranes;
- Ladders, access platforms and scaffolding;
- Pressure vessels, gas cylinders and pneumatic and hydraulic tools;
- Welding equipment;
- Radiation sources and
- Breathing apparatus.

Records of inspections for critical equipment will be maintained in Facility folders.

12.11 RESTRICTED EQUIPMENT FOR FACILITY

Some tools may be used only after a risk assessment has been completed for the task in which the tool is to be used for and it has been approved by the Facility Coordinator and/or Delegate. Restricted tools are as follows:

- Explosive Power Tools (direct and indirect);
- Demolition Saw (*Quick Cut Saw*);
- Open Bladed Knives;
- Angle grinders with discs greater than 125mm (5” inches) but only up to 177.8mm (7” inches);
- Chainsaws and
- Over-centre load binders (dogs or lever chain dogs).

12.12 PROHIBITED EQUIPMENT FOR FACILITY

The following portable tools are ***not permitted on Facility*.**

- Angle grinders with discs greater than 177.8mm (7 inches) and
- Hard faced Hammers intended to strike hardened metal surfaces.

13 QUALITY ASSURANCE & CONFORMANCE

13.1 PRODUCT CONFORMANCE & TRACEABILITY

Conformance to specification may be recorded for traceability by using one or more of the methods shown below in this section where required by the contract.

Daracon require the following specific records for material that is considered significant in the construction of a quality product:

Product	Record
Various quarried construction materials	Batch / Production Identifier Conformance Results

Daracon will be responsible for establishing traceability requirements and setting out of work required under the contract. This will only be different whereby the contract conditions state otherwise.

13.2 PROCESS CONTROL DOCUMENTS

Process controls for operations at this facility will be based on Inspection and Test Plans, Inspection Checklist Reports, Process Control Plans and Work Method Statements developed by the Operations Manager or their delegate based on the tasks and activities outlined in the construction program.

To ensure Daracon is implementing quality process controls as required and stated in site specific process control documents, regular **FRM.01203** *Process Control Surveillance* forms and/or quality related audits shall be completed and recorded accordingly in alignment with respective client needs and expectations.

When preparing process control documentation and planning works, the following shall be considered and identified where applicable:

- What is the sequence of construction or operations;
- Identify Plant and/or Equipment needed for the works;
    - Are there any specific maintenance or calibration requirements to ensure WHS, Environmental and Quality aspects are complied with?
- Where are the works located and what potential is there to impact on the Environment;
- Is there any specific training, skills, competency and/or qualification required for tasks;
- Define the preferred work methods and proposed materials to be used;
    - Based on the above identify product characteristics, allowable tolerances, and workmanship standards to be met as applicable.
- Develop or identify process controls charts applicable to the works that need to be followed where specified;
- Review and document intended and/or required inspection, test, and control points;
- Confirm the processes that will be adopted to monitor, validate, and verify the process control documents suitability for ongoing use and/or currency;
- Determine the records that will be kept as evidence to maintain traceability that work process controls remain effective and

- Identify responsible persons / facility positions for implementing, monitoring and rectification of any identified deficiencies in stated work process controls.
    - Ensure required stakeholders constructing works are consulted with as per the training objectives identified in this plan relating to process control documentation.

Where work processes are to be undertaken by Subcontractors; Engineers responsible for specific packages shall ensure that the subcontractor has suitable resources to manage and complete works in accordance with specifications as part of the qualification process outlined in **Clause 6.5** of the IFMP. In addition, any required process control documents and supporting work methods will be reviewed for adequacy against specifications and any other relevant guidance materials prior to works commencing.

The Facility Manager has the overall responsibility to ensure the process control plans are adequately implemented and monitored to ensure effectiveness and rectification of any deficiencies. This responsibility may be delegated by the Facility Manager to other Management and Engineering support staff within the facility team for packages being managed.

13.3 MATERIAL / PRODUCT TESTING

Where material / product testing is nominated to ensure manufactured items meet specifications, the Manager and/or Delegate must ensure all testing is completed within specified timeframes.

Records of material testing should detail the following information at a minimum:

- Facility Name and Number;
- Name of person requesting the test;
- Description of the tests required;
- Sample identification number;
- Material type to be tested;
    - Any other relevant sample description;
- Time and Date the test was completed / requested;
- Identification of how many tests are required and
- Clarify the required range or acceptance criteria.

Results must be analysed by a competent person for adherence to the testing requirements and accuracy. Where there is a discrepancy this shall be brought to the attention of the responsible Manager for rectification.

Where materials / products are identified as nonconforming, material / products shall be identified nagged accordingly. All non-conformances shall be raised be raised in accordance with **Clause 13.7**.

13.4 MEASURING & TEST EQUIPMENT

Equipment used for inspection, measurement or testing of the work shall be in good working order and where required to verify compliance, have a current calibration record as per requirements outlined in Control of Inspection, Measuring and Test Equipment ***IM-PRO-1302-001***.

Inspection, measuring and test equipment shall be handled carefully to preserve accuracy and reliability. Where results suggest uncertainty, equipment shall be re-calibrated and previous inspection and test results validated for accuracy.

Where required, a NATA accredited business relevant to the item being calibrated shall be engaged to provide records of conformance. A copy of their current accreditation shall be kept in Facility records.

13.5 INCOMING MATERIAL & PRODUCT CONFORMANCE

The Facility Coordinator and/or Delegate has the overall responsibility to ensure that all goods and materials received are inspected for conformance as follows:

- Product Damage and/or
- Material conformance.

This can either be done by visually inspecting the material for obvious defects and/or reviewing supporting documentation provided with the material / product to verify conformance to the required specification.

Defective and/or non-conforming materials identified through incoming inspections shall be marked clearly and kept separate from conforming products and materials. Such materials and products must then be processed as per the Control of Non-Conforming Product Procedure ***IM-PRO-1407-001.***

Where an incoming product does not match the order, the order should not be received at the Facility by Daracon. If material and/or products are delivered that results in an incident, an Immediate Incident Notification using ***IM-FOR-0306-001*** must be completed.

All incoming products and materials will be stored according to manufacturer's requirements to prevent deterioration and to preserve the integrity of the material and/or product.

13.6 NON-CONFORMANCE & CORRECTIVE ACTION

Managing non-conformances and associated corrective actions are essential and shall be done so in accordance with the Corrective and Preventive Action procedure ***IM-PRO-1407-002***. A non-conformance may be defined as something that has the potential to or has affected the service provided and/or the life of a product. It could pertain to per any of the following but is not limited to:

- Quality Non-Conformance
  - Where materials and/or products do not meet specifications.
- WHS Non-Conformance
  - Where works are carried out that do not comply with safety specifications, this plan or other procedures, risk assessments and regulatory requirements.
- Environmental Non-Conformance
  - Where works are carried out that do not comply with environmental specifications, this plan or other procedures, risk assessments and regulatory requirements.

Any conditions that have caused a non-conformance must be promptly documented, evaluated, and corrected in a timely manner. Corrective action shall be monitored to ensure that it has been implemented effectively.

14 RECORDS MANAGEMENT & DOCUMENT CONTROL

14.1 DOCUMENT CONTROL

The receipt and distribution of critical documents shall be controlled utilising Daracons Document and Drawing Register ***IM-REG-1000-002.*** This tool will help ensure that only current construction drawings and documents are being used. The Facility Coordinator and/or Delegate shall ensure that Facility documentation is maintained as follows:

- In a legible condition;
- Labelled with its title and revision number;
- Authorised and current and
- Readily available in either hard copy or electronically at the point of use.

14.2 MANAGEMENT OF FACILITY RECORDS

Facility records will be filed within clearly labelled folders. Where hard copies are not kept, electronic copies of all records will be maintained in a file structure that mirrors that of the hard copy records. The Facility Coordinator and/or Delegate is to consult with the Daracon IT Representative to ensure Facility specific electronic records are backed up on a regular basis.

14.2.1 FACILITY ARCHIVING

Facility records shall be archived in accordance with **IM-PRO-1400-001** *Business Records* and retained for future reference where required.

15 ACCOUNTABILITY

15.1 MANAGING DIRECTOR

The Managing Director shall ensure that all resources needed to fulfil the requirements outlined within this plan are made available. The Managing Director shall hold all relevant managers accountable to implement and monitor all applicable requirements within this plan.

15.2 MANAGER RESPONSIBLE FOR DARACON GROUP SYSTEMS

The Manager responsible for Daracon Group Systems shall ensure that the requirements of this plan are effectively implemented across the group and subsidiary companies that they may apply to from time to time. This shall be completed by implementing adequate review and monitoring processes to ensure compliance with this plan.

15.3 GENERAL AND DIVISIONAL MANAGERS

Senior Management (*General and Divisional Managers*) are required to have a strong understanding of the requirements of this Plan applicable to their Facilities. They are to ensure requirements outlined within are effectively implemented and monitored across all their responsible operational areas of the business.

15.4 FACILITY MANAGEMENT PERSONNEL

Facility Management Personnel are required to have a strong understanding of the requirements in this Plan to ensure effective implementation at the Facility. Facility Management must hold all workers on this Facility accountable to follow and work in accordance with this plan.

15.5 DARACON WORKERS

All Daracon workers shall fully comply with the requirements of this plan.

15.6 SUBCONTRACTORS

Where Subcontractors are working under the Daracon Management System at this Facility, all Subcontractors and their workers shall fully comply with the requirements of this plan.

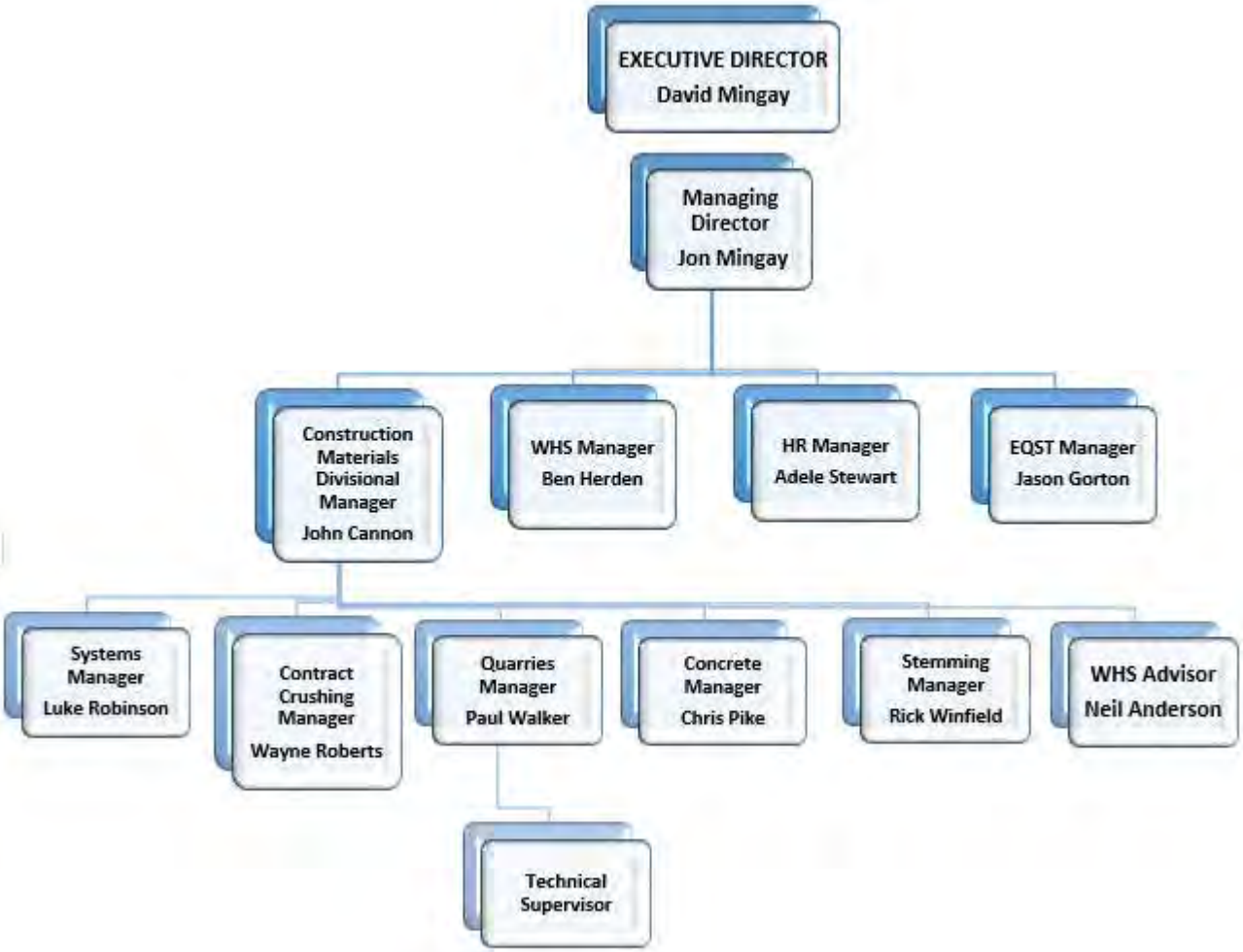
16 DEFINITIONS

All terms referenced within this plan are included within **REG.00001** *Definitions & Glossary of Terms Register.*

17 ASSOCIATED DOCUMENTS AND PROCEDURES

Approved Forms, Process Flowcharts, Registers and/or other documents referenced within the body of, or those that are associated with this plan, are accessible and made available for all Daracon personnel via the following link: **https://dms.daracon.com.au/**

APPENDIX 1 Organisation Chart



APPENDIX 2 Roles & Responsibilities

Facility Name:			Facility Number:
Ardglen Quarry			BAR
Issue Number:	002	**Issue Date:**	27/07/2023

All persons engaged by Daracon Group (workers, contractors and visitors) are responsible for working in a manner that does not compromise the health or safety of themselves or others, impact upon the environment or affect the quality of products being delivered.

This document will be used to ensure all personnel are aware of their roles & responsibilities. Managers and Supervisors are responsible for their Facilities and are therefore accountable for WHS & EQ performance within areas under their control.

Other Responsibilities and authorities are further defined in the Daracon Management System (DMS) Procedures (PRO) & supporting documentation including the Integrated Facility Management Plan (IFMP) for this Facility.

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Managing Director (MD)

The Managing Director is responsible for the following but not limited to:

- WHS and EQ Leadership ensuring clear direction on responsibilities and objectives;
- Establish Company directions and define Policies for safety, quality and environmental management practices;
- To assign competent, qualified and experienced personnel in the roles of WHS/EQ and Injury Management;
- Ensure the implementation of Policies, Procedures, Programs and strategies, to all persons, internal and external to Daracon;
- Approval of WHS & EQ Policies and Procedures affecting the direction of the Company;
- Providing resources to support the strategic direction for WHS & EQ within the Daracon Group;
- Ensuring the company complies with the relevant Legislation and other requirements;
- Setting the standard for safe behaviour;
- Provide necessary resources to ensure that products meet Client expectations and comply with Company Safety, Quality and Environmental Policies and
- The safety of Daracons workforce and all those who enter Daracon work sites.

Director - Business Development

The Director Business Development is responsible for the following but not limited to:

- Develop, prepare and submit tender bids;
- Provide accurate sales and tender forecasts;
- Assist in the translation of successful tenders into budgets and programs;
- Liaise with customers to ensure that the company performs to expectations;
- Participate in the Facility reviews and determine customer satisfaction upon achieving PC;
- Determine annual targets for the business in conjunction with the Managing Director and Chief Financial Officer;
- Seek out and cultivate business opportunities to ensure the achievement of targets and
- Ensure estimating resources are correctly directed and controlled in line with business objectives.

Chief Financial Officer (CFO)

The Chief Financial Officer within Daracon Group is responsible for the Company's accounts and administration, including Company accounts and purchasing for the management of the company.

Divisional Managers (Other Senior Managers not listed)

Divisional Managers are responsible for the following but not limited to:

- Providing direction in the planning of work activities and to approve the necessary resources to minimise environmental impact and make the work activities safe while maintaining compliance with legislative obligations and company Procedures;
- Developing plans for WHS/EQ strategies required in their area of responsibility;
- Analysing the need for site-specific (or area specific) WHS/EQ plans and Procedures;
- Monitor compliance with the WHS/EQ Policies and Procedures and act on non-compliances/conformances;
- Continuously review the effectiveness of Facility Safety, Quality and Environmental Management Plans;
- Actively lead by example;
- Actively involved in the development and review of WHS/EQ Policies, Procedures, programs and strategies;
- Facilitate consultation on all matters relating to WHS/EQ;
- Follow-up on the delegated responsibilities to Line Managers and review their health, safety and environmental performance;
- To ensure all incidents are reported, investigated and appropriate controls are implemented to prevent a recurrence of the incident;
- Assign resources such as (site workers and equipment) to facilitate the effective management of identified risks;
- Approval of WHS/EQ management plans;

- Overall authority for WHS/EQ matters relating to the site and
- Overall authority for all quality aspects of the site.

Divisional Plant & Maintenance Manager

The Plant & Maintenance Manager has overall responsibility for resource and plant maintenance across the business. This position is responsible for but not limited to:

- The allocation of appropriate resources;
- Acquisition of subcontractors and suppliers relating to plant & equipment;
- Acquiring/disposing of plant and equipment;
- Environmental and WHS consideration when acquiring plant and equipment where practicable;
- Ensuring profitability of plant division;
- Overseeing day to day running of the Workshop, plant and heavy haulage float shifts and maintenance;
- Ensuring fuel supply for plant/equipment and trucks;
- Tracking of fuel delivered and fuel consumed in accordance with internal requirements and EPA guidelines;
- Acquiring/disposing of trucks/trailers for the haulage division and
- Repair coordination with the Plant Manager and/or Maintenance Manager.

EQ Coordinators / Advisors / Specialists

EQ Coordinators / Advisors / Specialists are responsible for the following but not limited to:

- Assisting in the facilitation and the implementation of the Corporate EQ Management System to identify hazards, assess and control risk and avoid resultant incidents;
- Contribute to the administration and implementation of the Site Management Plans to ensure compliance with corporate Procedures and manage Facility specific risks;
- Provide hands-on support at site level to ensure personnel understand and comply with the Corporate and legal EQ requirements;
- Coordinate environmental & quality programs in consultation with the EQ Manager to assist in developing safe work practices and to promote a positive environmental & quality culture;
- Actively assist in maintaining an effective and pro-active consultation process;
- Assist Line Management and Supervisors in the effective application of subcontractor management to ensure safe work practices and compliance with Daracon environmental and quality standards;
- Conduct audits and environmental & quality inspections to ensure practical application of the Site Management Plans in accordance with procedural and legal requirements;
- Coach and lead Line Managers in effective EQ management;
- Act as a resource to Facility workers in seeking information and solutions to EQ issues encountered at Facilities;

- In conjunction where at the request of senior or operational management, assist in the facilitation and the implementation of the Corporate WHS Management System to identify hazards, assess and control risk and avoid resultant incidents;
- Facilitate the roles and responsibilities of the WHS Coordinator where requested;
- Assist in maintaining legal compliance and identifying system improvement opportunities and
- Monitor and review work activities to ensure SWMS and/or EWMS where applicable are implemented and complied with and to stop unsafe acts, processes and quarantine unsafe plant, material or equipment and chemicals.

First Aid Persons & Emergency Controllers

First Aid Persons & Emergency Controllers are responsible for the following but not limited to:

- Providing first aid assistance when required;
- Accurately recording all injury treatment;
- Reporting all injuries to Management;
- Acquiring additional medical support where appropriate;
- Manage the coordination of emergency response processes where required in accordance with the emergency response plan;
- Ensure the emergency response plan is kept up to date at all times in consultation with Facility management;
- Participating in injury rehabilitation programs;
- Possessing a sound knowledge of the appropriate Policies and Procedures;
- Actively participating in Work Health & Safety programs, and
- Stimulating a high level of Work Health & Safety awareness within Daracon at all times.

Group Environment & Quality Manager (EQ) – *also EMR*

See Divisional Manager for other responsibilities.

The Group Environment & Quality Manager is responsible for the following but not limited to:

- Defining the organisation's EQ needs and plans and implementing the required system elements such as Policies, Procedures targets and objectives;
- Acquiring and disseminating information pertaining to EQ legislative requirements;
- Assess service providers for all aspects of EQ Management;
- Oversee the collation of environmental and quality reports and to devise statistical profiles;
- Review and investigate EQ incidents and assist in the implementation and review of control measures and oversee the EQ incident investigation procedure and ensure that corrective actions are followed up;
- Develop, monitor and review the Daracon Group Business Management System (*or DMS*) whilst working closely with Executive, other Senior Managers and Operational personnel;

- Review the effectiveness and suitability of environmental and quality programmes to educate workers on all aspects of EQ in order to ensure safe and environmentally friendly work practices and to promote a positive culture and an environmentally safe working environment;
- Assign and approve the necessary resources (human, technical and financial) to ensure the management of EQ is effective and adequate;
- Identify, plan, develop, implement and review all EQ legal aspects and requirements pertaining to Daracon to mitigate risks and potential incidents;
- Provide advice and direction on Daracon's requirements with respect to the WHS/EQ Management System;
- Prepare EQ reports to Executive and other Senior Management regarding the status of the EQ Management system;
- Interpret EQ legislation, standards and related documentation;
- Overall control of system documentation;
- Liaison with public authorities in relation to Quality and Environmental matters;
- Assist Line Management and Supervisors in the effective application of Subcontractor management to ensure safe work practices are adhered to and Policies and Procedures are complied with;
- Ensure all EQ Emergency Procedures are developed and implemented across the Group and also for each Facility and
- Facilitate internal, third party and client audits of the WHS/EQ system as per schedules and as required.

Group Work Health & Safety Manager (WHS)

See Divisional Manager for other responsibilities.

The Group WHS Manager is responsible for the following but not limited to:

- Defining the organisation's WHS needs and plans and implementing the required system element such as Policies, Procedures and objectives;
- Acquiring and disseminating information pertaining to WHS, Workers Compensation and Injury management legislative requirements;
- Oversee the collation of incident/injury/illness reports and to devise safety statistical profiles;
- Oversee the WHS incident investigation procedure and ensure that corrective actions are followed up;
- Oversee and advise on injury service providers, the implementation of injury management programs and development of Recover to Work Programs for injured persons;
- Review the Corporate WHS aspect of the Management System and ensure compliance with WHS legislation and associated legal obligations;
- Review the effectiveness and suitability of safety programmes to educate workers on all aspects of WHS in order to ensure safe work practices and to promote a positive safety culture;

- Assign and approve the necessary resources (human, technical and financial) to ensure the management of WHS is effective and adequate;
- Oversee the planning of WHS training including induction training of all task and industry specific training;
- Oversee the implementation of the Corporate WHS aspects of the Management System to identify and mitigate risks and potential incidents;
- Identify, plan, develop, implement and review all WHS legal aspects and requirements pertaining to Daracon to mitigate risks and potential incidents;
- Working with Daracon Senior Management and other Managers in the development of WHS Procedures, Safe Work Procedures, Work Permits, Registers Guides, Instructions and Forms;
- Actively lead by example and ensure that the work environment and activities conducted are safe and without unacceptable risk;
- Coordinate safety programs in consultation with the HR Manager to educate workers on all aspects of WHS in order to assist in developing safe work practices and to promote a positive safety culture;
- Actively assist in establishing, implementing and maintaining an effective and pro-active consultation process;
- Ensure all WHS Emergency Procedures are developed and implemented across the Group and also for each Facility and
- Facilitate internal, third party and client audits of the WHS aspects of the management system as per schedules and as required.

Human Resources Manager (ER & IR)

The Human Resources Manager shall provide advice on interpretation and consistent application human resource management and assist other Managers with the management of related HR/ER/IR matters.

Injury Management Advisor

The Injury Management Advisor is responsible for the following but not limited to:

- Coordinate the rehabilitation of injured workers and develop Recover-to-Work programs;
- Facilitate pre-employment medicals for all new Daracon Workers;
- Monitor and facilitate Health Surveillance medicals;
- The Injury Management Advisor will, in consultation with the injured party and his/her Supervisor, develop a list of suitable duties that are within the limits of the WorkCover Medical Certificate;
- Facilitate all medical treatments and other assistance required to promote a timely Recover to normal duties;
- Maintain contact with the injured person and with their Supervisor to review the appropriateness of the suitable duties and where necessary monitor and if required change the duties;
- Review the effectiveness and frequency of the medical treatment being provided;
- Maintain all documentation pertaining to the process of Injury Management;

- Prepare, in consultation with the injured person and site Supervisor / Facility Manager a Recover to Work plan in accordance with a medical certificate;
- To regularly review the suitability of duties and revise the Injury Management Plan as required and in accordance with WorkCover Medical Certificates;
- Organise medical appointments and ensure all appointments are kept or changed as required;
- To liaise with the Insurer, in relation to notifying requirements and claims processing and
- Review the adequacy, effectiveness and suitability of all Policies, Procedures and arrangements for Injury Management.

Facility Coordinators

The Facility Coordinator is responsible for the following but not limited to:

- Actively lead by example and make expectations clear to all;
- Ensure all workers are inducted to site and possess the appropriate training as required to perform their jobs safely onsite;
- Assist in identifying hazards, assess and control the risks in conjunction with site workers;
- Monitor systems of work and the working environment to ensure it is safe and without risks to health and safety and/or the environment;
- Ensure materials or substances are stored and handled safely and without risks to health and safety or the environment;
- Coordinate activities where responsible to ensure that all workers and subcontractors carry out work tasks safely and in compliance with company Procedures;
- Ensure all incidents are reported, investigated and appropriate controls are implemented to prevent a recurrence of the incident;
- Monitor and review work activities where responsible for works to ensure SWMS are implemented and complied with; and to stop unsafe acts, processes, and quarantine unsafe plant, material or equipment and substances;
- Participate in and consult with workers on all matters relating to WHS/EQ procedure and strategies;
- Consult with employees on behalf of management on relevant matter relating to WHS/EQ;
- Participate and deliver toolbox talks;
- Provide instruction and direction to all persons working under Daracon Groups control to ensure work at the Facility is undertaken in accordance with the Group’s WHS/EQ Policies and Procedures;
- Be actively involved in inspections and auditing;
- Maintain site facilities and coordinate replacement items and inspections;
- Co-ordinate emergency response on site and maintain site First Aid and emergency response equipment;
- Correct unsafe practices, conditions or situations promptly;
- Ensure environmental control measures are implemented and maintained;
- Recognise and reinforce safe practices and behaviours and

- Communicate regularly and engage work teams in the solutions to issues that impact on the safe operation of the Facility.

Subcontractors

Each Subcontractor is responsible for the satisfactory performance of their assigned tasks under the direction of the Facility Management Team and/or person from Daracon engaging the Subcontractor.

Subcontractors are also responsible for the following but not limited to:

- Subcontractors shall accept responsibility for any person employed by them whilst working on any Daracon Facility and are required to employ WHS/EQ standards and Procedures equivalent to that of Daracon;
- Development and supply of suitable risk assessments for works (i.e. *Safe Work Method/Risk Assessment*) for all tasks performed onsite;
- Immediately report unsafe situations, conditions or work practices;
- Immediately report any incidents or injury (regardless of the severity) to the Supervisor;
- Actively participate in pre-start and toolbox training talks;
- Subcontractors must comply with legislative and Daracon COR and Fatigue Management Systems.
- Subcontractors are responsible for ensuring the competency of persons assigned to perform a task.
- Ensure compliance to the requirements of the relevant Acts and Regulations.

Supervisors, Foreman and Leading Hands

These roles are responsible for the following but not limited to:

- Actively lead by example and make expectations clear to all and hold people accountable for their actions;
- Ensure all workers are inducted to site and possess the appropriate training as required to perform their jobs safely onsite;
- Identify hazards, assess and control the risks in conjunction with site workers;
- Ensure the systems of work and the working environment is safe and without risks to health and safety and/or the environment;
- Ensure plant and equipment, materials or substances are safe and without risks to health and safety or the environment;
- Coordinate all activities to ensure that all workers and subcontractors carry out work tasks safely and in compliance with company Procedures;
- Participate in the rehabilitation process with injured workers;
- Ensure all incidents are reported, investigated and appropriate controls are implemented to prevent a recurrence of the incident;
- Monitor and review work activities to ensure SWMS are implemented and complied with and to stop unsafe acts, processes, and quarantine unsafe plant, material or equipment and substances;
- Participate in and consult with workers on all matters relating to WHS/EQ procedure and strategies;

- Consult with employees on behalf of management on relevant matter relating to WHS/EQ;
- Implement pre-start and toolbox talks;
- Provide instruction and direction to all persons working under Daracon Groups control to ensure work is undertaken in accordance with the Group's WHS/EQ Policies and Procedures;
- Be actively involved in inspections and auditing;
- Maintain site facilities and coordinate replacement items and inspections;
- Co-ordinating emergency response on site and maintain site First Aid and emergency response equipment;
- Correct unsafe practices, conditions or situations promptly;
- Ensure environmental control measures are implemented and maintained;
- Ensure quality targets are met;
- Recognise and reinforce safe practices and behaviours and
- Communicate regularly and engage work teams in the solutions to issues.

Suppliers

Each Supplier is responsible for the satisfactory performance of their assigned tasks under the direction of the Facility Management Team and/or person from Daracon engaging the Supplier.

In addition Suppliers must comply with legislative and Daracon COR and Fatigue Management Systems.

WHS Committee

The WHS Committee has been established to consult about matters involving changes to the organisation and performance of work within Daracon.

The role of the WHS Committee is to:

- Facilitate the process of workplace reform through consultation;
- Develop, review and advise Daracon Management on key issues aimed at improving performance, efficiency and productivity;
- Monitor and discuss the operation of the Employee Agreement as well as general issues, which affect the workplace, the worker's and subcontractors and
- Facilitate and monitor the implementation of the terms of the Daracon Employee Agreement.

WHS Coordinators / Advisors / Specialists

WHS Coordinators / Advisors / Specialists are responsible for the following but not limited to:

- Assisting in the facilitation and the implementation of the Corporate WHS Management System to identify hazards, assess and control risk and avoid resultant incidents;
- Contribute to the administration and implementation of the Site Management Plans to ensure compliance with corporate Procedures and manage Facility specific risks;
- Provide hands-on support at site level to ensure personnel understand and comply with the Corporate and legal WHS requirements;
- Coordinate safety programs in consultation with the WHS Manager to assist in developing safe work practices and to promote a positive safety culture;
- Actively assist in maintaining an effective and pro-active consultation process;
- Assist Line Management and Supervisors in the effective application of subcontractor management to ensure safe work practices and compliance with Daracon safety standards;
- Conduct audits and safety inspections to ensure practical application of the Site Management Plans in accordance with policy and legal requirements;
- Coach and lead Line Managers in effective WHS management;
- Act as a resource to Facility workers in seeking information and solutions to WHS issues encountered at Facilities;
- In conjunction where at the request of senior or operational management, assist in the facilitation and the implementation of the Corporate EQ Management System to identify hazards, assess and control risk and avoid resultant incidents;
- Facilitate the roles and responsibilities of the EQ Coordinator where requested;
- Assist in maintaining legal compliance and identifying system improvement opportunities and
- Monitor and review work activities to ensure SWMS are implemented and complied with and to stop unsafe acts, processes and quarantine unsafe plant, material or equipment and chemicals.

Workers (*including Subcontractors* and Suppliers)

Workers are responsible for the following but not limited to:

- Assess their work tasks for hazards and associated risks and report unsafe or environmentally hazardous situations;
- Actively participate and contribute in consultation when reviewing control measures proposed for controlling hazards or risks;
- Familiarise themselves with Daracons objectives and targets and any other initiatives implemented at Facilities;
- Immediately report unsafe situations, conditions or work practices;
- Performing all duties in a manner which will ensure their own health and safety and those of others;
- Comply with the responsibilities assigned under applicable risk assessments for their works;
- Immediately reporting any injury, hazard or defective piece of equipment;

- Actively participating in Work Health & Safety meetings, programs and toolbox talks;
- Actively participating in injury rehabilitation programs;
- Comply with safety Procedures and directions detailed in the WHS/EQ Management System;
- Are required to undertake their task competently, by applying their skills, training and knowledge and not to undertake tasks for which they are not trained;
- Participate and cooperate in any incident investigation process;
- Co-operate with the company WHS/EQ Policies and Procedures and programs to ensure the health and safety of themselves and others in the workplace;
- Immediately report any incidents or injury (regardless of the severity) to the Supervisor and
- Actively participate in pre-start and toolbox training talks.

APPENDIX 3 Traffic and Transport Management Plan

Traffic and transport Management Plan

Project Name	Ardglen Quarry
Job No.	BAR
Client	Various
Contract No.	N/A

Document No. 1

Holder: DARACON / Client

Revision	Date	Prepared By	Reviewed By Quarry Manager	Authorised By Systems Manager	
				Name	Sign
10	02/08/22	Luke Robinson	Paul Walker	Luke Robinson	

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Ardglen Quarry

1. INTRODUCTION

This Traffic and transport Management Plan (TTMP) applies to the Ardglen Quarry site and forms part of the overall management structure for the site. It has been developed to meet the requirements of the relevant Road Authorities and Australian Standards for the safe and controlled movement of traffic at worksites.

The following principles have been applied in the preparation of this document:

- Consultation with relevant agencies, community representatives and road users is an essential part of the planning process and undertaken when required
- Only qualified and experienced personnel shall prepare and install Traffic Control Plan's (TCP's) / Vehicle Movement Plan's (VMP's)
- Minimise the impact on road users and adjoining communities by providing ample notice of changes to traffic arrangements
- Regularly monitor traffic facilities to ensure ongoing effectiveness
- Keep orderly, current and complete records to verify conformance
- Look for opportunities to improve processes and project delivery

In addition to meeting the specific performance measures and criteria in this Approval, we also commit to implementing all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this Approval.

Additionally, we commit to applying existing management strategies plans or programs until the approval of a similar plan by the Planning Secretary.

1.1 Distribution List

Document No.	Holder	Issue Date	Entered By:
1	Daracon Group	02/08/22	LR
2	DPIE	02/08/22	LR

1.2 Document Control

The TTMP is a controlled document and shall be managed in accordance with the Document Data Control Procedure. Each person receiving a controlled copy is responsible for keeping it in good order and incorporating changes as they are distributed.

This plan shall be amended to reflect changes in personnel, the scope of work, work methods, the nature and frequency of testing and record requirements. Amendments shall be reviewed by the Quarry Manager before approval by the Systems Manager or designee.

Revised pages shall be issued to holders of a controlled copy of the plan.

1.3 Review

In general Traffic Control Plan's (TCP's) and/or Vehicle Movement Plans (VMP's) shall be under constant review by those personnel using those and any deficiency shall be noted for corrective action. Corrective actions shall be documented with proposed rectification dates allocated.

The Systems Manager or designee shall audit the effectiveness of the TTMP as part of the internal audit process or whenever an opportunity for improvement is identified. Further to this and depending on the requirements of site, additional road safety audits will only be scheduled and completed by qualified and certified Road Safety Auditors. A Road Safety Audit (RSA) will be completed subject to the specific requirements of the site or at the request of an authorised regulatory authority.

2. SITE OVERVIEW

2.1 Job Title

Name of site: Ardglen Quarry
Address/Location: Warra St Ardglen

2.2 Scope of Work

All of Daracon's works are to comply with local, state, federal and Client safety specifications. Activities to be conducted in this job include:

- Site establishment
- Personnel Induction
- Manage vehicular movements off the New England Highway, into the Ardglen township and quarry site
- Load trucks with the relevant materials
- Manage vehicular movements out of the quarry site, Ardglen township and back onto the New England Highway

2.3 Overview of Traffic Impacts

Site activities will require the following impacts to be managed:

- Compliance with the Consent
- Vehicular movements along the New England Highway
- Vehicular movements through Ardglen township
- Vehicular movements within the quarry site
- Adhering to the relevant noise requirements for the site
- Adherence to the Ardglen Quarry Code of Conduct (CoC)
- The application of disciplinary action to drivers who breach the CoC
- Communication of the relevant vehicle movement plans (VMP's) to the drivers
- Interactions with existing road users and pedestrians

2.4 Reference Documents

The following documents form the basis of this plan and outline the work practices that will be adopted. Copies shall be accessible, as hard copy or electronic media, to all site personnel.

Relevant documents

- Consent 06_0264 MOD2
- Current RMS Traffic Control at Worksites Manual
- Traffic Control at Work Sites (TCAW)

Daracon documents

- Corporate Quality and Environmental Management System
- Relevant Australian Standards

Table 1 below outlines the relevant traffic conditions from the Approval for this TTMP and where they have been addressed within the TTMP.

Table 1 – Regulatory Requirements

Condition	Description	Section(s) Addressed
Use of Crown Roads		
Schedule 2 Condition 14A	The Applicant must make reasonable efforts to assist in the transfer of any Crown roads forming part of the quarry access route to Council, prior to undertaking any works in the Extension Area.	Appendix E
Hours of Operation		

<table>
<tr><th>Condition</th><th>Description</th><th>Section(s) Addressed</th></tr>
<tr><td rowspan="3">Schedule 3 Condition 1</td><td>The Applicant must comply with the hours of operation in Table 1.</td><td rowspan="3">Section 5</td></tr>
<tr><td>
Table 1: Hours of Operation
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td rowspan="2">Topsoil/overburden removal/emplacement</td><td>Monday-Saturday</td><td>7.00am to 5.00pm</td></tr>
<tr><td>Sunday</td><td>None</td></tr>
<tr><td rowspan="2">Blasting</td><td>Monday-Friday</td><td>10:00am to 3.00pm</td></tr>
<tr><td>Saturdays, Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">In-pit activities (including drilling, extraction, and transfer of material out of the pit)</td><td>Monday-Saturday</td><td>7.00am to 5:30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">Out-of-pit activities (including processing, and stockpiling)</td><td>Monday-Saturday</td><td>7.00am to 5:30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Maintenance (if inaudible at nearby residences)</td><td>Monday-Sunday</td><td>Any time</td></tr>
<tr><td rowspan="2">Truck loading and distribution</td><td>Monday-Saturday</td><td>6.30am to 5.30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Rail loading</td><td>Monday-Sunday</td><td>7:00am to 10:00pm</td></tr>
</table>
</td></tr>
<tr><td>Note:
• The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41).
• The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast.</td></tr>
<tr><td colspan="3">Transport</td></tr>
<tr><td colspan="3">Product Transport</td></tr>
</table>

Condition	Description	Section(s) Addressed
Schedule 3 Condition 33	The Applicant must: (a) keep records of the: • amount of quarry materials imported onto the site each calendar year; • amount of quarrying products transported from the site each calendar year; • number of truck movements generated by the development on an hourly basis on any days in which truck loading and distribution occurs; • registration plate details and time of departure for all laden trucks dispatched from the quarry; • number of train movements generated by the development, on a weekly basis; • date and time of each train movement generated by the development; (b) provide annual production data to MEG using the standard form for that purpose; and (c) include these records in the Annual Review.	Section 7
Road Safety and Condition Audit		
Schedule 3 Condition 33A	Prior to truck movements associated with the development exceeding 55 movements per day, the Applicant must undertake (and complete) all agreed actions outlined in the Road Safety and Condition Audit Report prepared by Crossroads Civil Design dated October 2018, to the satisfaction of the relevant roads authority (i.e. TfNSW or Council). If there is a dispute about the implementation of these measures, then the Applicant may refer the matter to the Planning Secretary for resolution.	Section 6.2 and Appendix C
Schedule 3 Condition 34	By 31 December 2025 or within five years of commencing quarrying operations in the Extension Area (whichever is the latter), Daracon will undertake a Road Safety and Condition Audit for the development, to the satisfaction of the Planning Secretary. This audit must: (a) be prepared by a suitably independent and qualified expert/s whose appointment has been approved by the Planning Secretary; (b) be prepared in consultation with the TfNSW and Council; (c) assess the safety, performance and condition of the Ardglen Street (Main Street)-New England Highway intersection and the quarry access route; and (d) identify any road works that are required to comply with relevant AUSROAD standards or other relevant TfNSW or Council requirements.	Section 6.2
Schedule 3 Condition 35	Within 12 months of completing the Road Safety and Condition Audit required under condition 34 of this Schedule, unless otherwise agreed by the Planning Secretary, the Applicant must undertake (and complete) any road works recommended in the Audit, to the satisfaction of the relevant roads authority (i.e. TfNSW or Council). If there is a dispute about the implementation of these measures, then the Applicant may refer the matter to the Planning Secretary for resolution.	Section 6.2
Road Signage		

Condition	Description	Section(s) Addressed
Schedule 3 Condition 36	Within 3 months of this approval, the Applicant must install warning signs ("Truck Turning") on the northern and southern approaches to the quarry access route on the New England Highway, to the satisfaction of the TfNSW.	Section 4.6
Road Maintenance		
Schedule 3 Condition 37	The applicant must maintain the quarry access route until the cessation of quarrying operations on the site, to the satisfaction of Council. If the Applicant and the Council fail to reach agreement on the road maintenance requirements, then either party may refer the matter to the Planning Secretary for resolution. Any determination by the Planning Secretary on this matter will be binding on the Applicant and the Council.	Section 4.7
Road Haulage		
Schedule 3 Condition 38	The Applicant must ensure that truck movements associated with the development do not exceed: (a) a total of 110 movements per day; (b) a total of 5 movements between 6.30 am and 7.00 am; and (c) a total of 30 movements per hour between 7.00 am and 5.30 pm.	Section 5
Schedule 3 Condition 39	The Applicant must not use trucks which are larger than truck and dog combination vehicles[a] or have a capacity of greater than 38 tonnes to transport product from the site, unless otherwise agreed in writing by TfNSW. *a In this condition, 'truck and dog combination vehicle' means National Class 2 Performance Based Standards Level 1 & 2A Truck and Dog Trailer (or equivalent) as determined by the National Heavy Vehicle Regulator*	Section 5
Schedule 3 Condition 40	The Applicant must: (a) implement a speed limit of not more than 40 kilometres per hour for quarry-related truck movementsa along the quarry access route; (b) investigate options to impose a speed limit of 20 kilometres per hour for all heavy vehicle movements along the High Street bridge and install appropriate warning signage, in consultation with Council; (c) ensure that all laden trucks entering or leaving the site are covered, and are cleaned of materials that may fall onto public roads; (d) ensure that all laden trucks pass through a wheel wash prior to departing the site; and (e) take all reasonable steps to minimise traffic safety issues and disruption to local road users.	Section 5 and Appendix B
Schedule 3 Condition 40A	Prior to commencing increased truck movements as described in EA MOD 2, or other timing as agreed by the Planning Secretary, the Applicant must undertake road widening along Ardglen Street (Main Street) to achieve a minimum pavement width of 7 m (excluding road shoulders), to the satisfaction of Council.	Section 4.8

Condition	Description	Section(s) Addressed
Rail Loading		
Schedule 3 Condtion 41	The Applicant may only load a maximum of 2 trains outside the rail loading and distribution hours in Table 1 in any 12 month period, unless agreed to in writing by the Planning Secretary.	Section 5
Schedule 3 Condition 42	If the Applicant intends to undertake out of hours rail loading, it must use its best endeavours to notify all local residents at least 12 hours prior to the proposed rail loading, to the satisfaction of the Planning Secretary.	Section 5
Traffic and Transport Management PLan		
Schedule 3 Condition 43	The Applicant must prepare a Traffic and Transport Management Plan, to the satisfaction of the Planning Secretary. The plan must: (a) include a driver code of conduct which outlines; • safety initiatives for haulage through the village and along school bus routes; • an induction procedure for truck drivers; and • complaints handling and disciplinary procedures; (b) include: • measures that would be put in place to ensure compliance with the driver code of conduct; • measures that would be implemented to ensure compliance with condition 40 of this Schedule; • measures that would be taken to avoid night time train loading operations; and • procedures for notifying local residents about night time train loading activities when these occur; and (c) be submitted to the Planning Secretary for approval prior to truck movements associated with the development exceeding 55 movements per day, (or other timeframe as agreed by the Planning Secretary).	Section 4.1 and Section 5
Schedule 3 Condition 43A	The Applicant must implement the Traffic and Transport Management Plan as approved by the Planning Secretary.	Section 4.1
Reporting		
Schedule 5 Condtion 3	The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.	Section 7
Schedule 5 Condtion 3A	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name),	Section 7

Condition	Description	Section(s) Addressed
	set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	
Community Consultative Committee		
Schedule 5 Condtion 7	The Applicant must operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Planning Secretary, in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019).	Section 7
Access to Information		
Schedule 5 Condtion 8	Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Applicant must:	Section 7
	(a) provide a copy of the relevant document/s to the relevant agencies and CCC; and	
	(b) put a copy of the relevant document/s on its website.	
Schedule 5 Condtion 9	During the development, the Applicant must:	Section 7
	(a) include a copy of this consent, as may be modified from time to time, on its website;	
	(b) provide a full summary of monitoring results required under this consent on its website; and	
	(c) update these results on a regular basis (at least every 6 months).	
Statement of Commitments – Traffic Management and Access		
11	The Proponent will not transport more than 500,000 tonnes of product from the site each year	Section 5

3. PERSONNEL

3.1 Qualifications

Daracon Group has assigned personnel to this project who are appropriately qualified (including RMS qualifications) and experienced in traffic management, Prepare a Work Zone Traffic Management Plan etc.

Details of the full project organisation and qualifications are kept and maintained at our Beresfield Head Office.

3.2 Responsibility and Authority

The principal responsibilities for personnel involved in traffic management are as follows:

3.2.1 Quarry Manager

The Quarry Manager is responsible for the quarry management and shall establish and maintain the TTMP for this project and shall be responsible for its ongoing effectiveness.

The Quarry Manager shall determine whether the VMPs proposed are appropriate, or are the most appropriate, with or without minor modification.

3.2.2 Quarry Supervisor

The Quarry Supervisor is responsible to the Quarry Manager for the day to day co-ordination and site control of direct labour, plant, subcontractors and suppliers for quarry works. Management of these tasks includes the installation, monitoring and maintenance of traffic controls.

The Quarry Supervisor shall consult with the Quarry Manager, if necessary, to confirm that the proposed VMP's are appropriate.

3.2.3 Traffic Controllers

The Quarry Manager shall appoint qualified personnel to control traffic according to approved TCP's for the worksite as required.

4. TRAFFIC MANAGEMENT PLANNING

4.1 Traffic Management Plan Approval

A Traffic Management Plan shall be prepared for the site to address the requirements of the relevant consent. The TTMP shall be submitted for approval as required in the Approval.

Daracon will prepare a Traffic and Transport Management Plan, to the satisfaction of the Planning Secretary. The plan must:

(a) include a driver code of conduct which outlines;

- safety initiatives for haulage through the village and along school bus routes;
- an induction procedure for truck drivers; and
- complaints handling and disciplinary procedures;

(b) include:

- measures that would be put in place to ensure compliance with the driver code of conduct;
- measures that would be implemented to ensure compliance with condition 40 of this Schedule;
- measures that would be taken to avoid night time train loading operations; and
- procedures for notifying local residents about night time train loading activities when these occur; and

(c) be submitted to the Planning Secretary for approval prior to truck movements associated with the development exceeding 55 movements per day, (or other timeframe as agreed by the Planning Secretary).

Daracon will implement the Traffic and Transport Management Plan as approved by the Planning Secretary.

4.2 Traffic Control Plans / Vehicle Movement Plans

A Traffic Control Plan (TCP) or Vehicle Movement Plan (VMP) shows the arrangements for warning traffic and guiding it around, past or through a worksite. These shall be prepared and be updated as necessary to reflect changes in traffic flow or work practices. Only suitably trained personnel (refer TCAW 2.4) shall select, design, approve and implement these.

4.3 Selection

The Quarry Manager or delegate will choose a Standard TCP / VMP from the TCAW where it accurately reflects the conditions at a worksite. Minor modifications to the design which have been identified in a Risk Assessment and/or site inspection shall be made by a person with a current certificate in TCAW Planning.

4.4 Public Relations and Communication

The local community, road users and other stakeholders shall be kept informed of changed traffic arrangements so that adverse impacts can be minimized.

4.5 Emergency Response

An Emergency Response Plan shall be designed and implemented for the work and shall include the response to traffic emergencies such as accidents or unplanned disruptions.

The Quarry Supervisor or designee shall be on 24 hour call to respond to emergencies and contact numbers shall be prominently displayed to enable early notification and response.

4.6 Signage

Daracon have installed warning signs (“Truck Turning”) on the northern and southern approaches to the quarry access route on the New England Highway, to the satisfaction of the TfNSW.

4.7 Road Maintenance

Daracon will maintain the quarry access route until the cessation of quarrying operations on the site, to the satisfaction of Council.

4.8 Improvements to the Access Road

Prior to commencing increased truck movements as described in EA MOD 2, or other timing as agreed by the Planning Secretary, Daracon will undertake road widening along Ardglen Street (Main Street) to achieve a minimum pavement width of 7 m (excluding road shoulders), to the satisfaction of Council.

5. SPECIFIC STRATEGIES

This table summarises the identified traffic aspects of the work, assess their impact and describes the control strategies that will be implemented.
Copies of the detailed VMPs incorporating these strategies are in **Appendix A**. A copy of the detailed Code of Conduct (CoC) incorporating these strategies is contained in **Appendix B**.

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact assessment**	**Control measure**
Breach consent conditions regarding permitted daily truck movements and annual quantity exported from site	Potential for a large quantity of truck movements to and from the quarry creating traffic issues	Daracon will ensure that truck movements associated with the development do not exceed: (a) a total of 110 movements per day; (b) a total of 5 movements between 6.30 am and 7.00 am; and (c) a total of 30 movements per hour between 7.00am and 5.30pm A spreadsheet will be used to record and monitor the daily truck movements associated with Ardglen Quarry Daracon will not transport more than 500,000 tonnes of product from the site each year A copy of the Approval will be displayed along with the relevant monitoring data on the Daracon website. A copy of all relevant approved Management Plans will be displayed on the Daracon website.
Vehicular movements along the New England Highway	Vehicles turning off the New England Highway into the township of Ardglen	“Trucks turning” pre-warning signage installed as detailed in the Consent Drivers informed to indicate and start slowing early for the turn into the township of Ardglen
Vehicular movements through Ardglen township	Vehicles lost or unsure of the appropriate route to take. Vehicles ignoring specific instructions regarding their appropriate movements through the township of Ardglen	Driver Code of Conduct (CoC) developed and communicated to all drivers Maximum number of 110 truck movements can occur per day (meaning 55 loaded trucks departing the quarry per day)

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact assessment**	**Control measure**
		"Quarry general site access" VMP developed and communicated to all drivers A self-imposed speed limit of 40kph will be applied to all trucks driving through the township of Ardglen with the CoC updated to reflect this. Where it is possible and safe to do so, Daracon will request that all trucks not to exceed 20 kph when driving in either direction over the rail bridge. Liverpool Plains Shire Council will be consulted as part of this 'truck specific' speed limitation over the rail bridge once the TTMP is approved by DPE. Daracon will not use trucks which are larger than truck and dog combination vehicles or have a capacity of greater than 38 tonnes to transport product from the site, unless otherwise agreed in writing by TfNSW. All laden trucks entering or leaving the site must be covered and cleaned of materials that fall onto public roads. All laden trucks will pass through a wheel wash prior to departing the site
Vehicular movements within the quarry site	Vehicles lost or unsure of the appropriate route to take on site. Vehicles ignoring specific instructions regarding their appropriate movements whilst on site	Driver Code of Conduct (CoC) developed and communicated to all drivers to ensure we take all reasonable steps to minimise safety issues and disruption to local road users. Maximum number of 110 truck movements can occur per day (meaning 55 loaded trucks departing the quarry per day) "Quarry site vehicle movement" VMP developed and communicated to all drivers
Adhering to the relevant noise requirements for the site	Vehicles arriving or departing site outside the nominated and approved hours	Driver Code of Conduct (CoC) developed and communicated to all drivers

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact assessment**	**Control measure**
		"Quarry general site access" VMP developed and communicated to all drivers "Quarry site vehicle movement" VMP developed and communicated to all drivers Export of material from site between the hours of 6:30 am and 5:30 pm Monday to Saturday with no transport permitted on Sundays and Public Holidays
Adherence to the Code of Conduct (CoC)	Inappropriate vehicular access to site (times / loads)	If a driver is found to breach the CoC, they will receive disciplinary action which will include one or more of the following: • The driver will be provided with a warning and will be re-introduced into the CoC; • The driver being precluded from site; • De-registration from the Daracon system entirely in the case of a subcontractor;
Communication of the relevant vehicle movement plans (VMP's) to the drivers	Unfamiliar with the site specific requirements	Driver Code of Conduct (CoC) developed and communicated to all drivers with all drivers to read, understand and sign acknowledgement of such
Interactions with the school bus within the township of Ardglen	Unsafe vehicular and pedestrian interactions with school children and bus movements	Drivers need to be aware of the fact that school buses collect children from Main St Ardglen at the following times: • Between 8.10am and 8.15am on school days; • Between 4.10pm and 4.15pm on school days; • Drivers need to be vigilant at these times due to the increased presence of pedestrians and vehicles associated with the school bus drop offs and collections; A self-imposed speed limit of 40kph will be applied to all trucks driving through the township of Ardglen with the

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact assessment**	**Control measure**
		CoC reflecting this and the presence of school buses and children for the times listed above.
Pedestrian activity within Ardglen township	Unsafe vehicular and pedestrian interactions	Although pedestrian activity through the township of Ardglen is irregular and limited, drivers also need to be vigilant as pedestrians intermittently utilise the rail over pass bridge; A self-imposed speed limit of 40kph will be applied to all trucks driving through the township of Ardglen. The CoC will reflect this and the potential presence of pedestrians will be highlighted. If Daracon becomes aware of a specific need for a member of the public to gain access across the rail bridge (other than a vehicular movement), all drivers will be informed of the proposed activity and expected duration. If necessary, haulage activates will be modified for short periods to facilitate the process.
Night time train loading	Adverse noise impact	Daracon will only load a maximum of 2 trains outside the rail loading and distribution hours in Table 1 in any 12 month period, unless agreed to in writing by the Planning Secretary. If Daracon intends to undertake out of hours rail loading, it must use its best endeavours to notify all local residents at least 12 hours prior to the proposed rail loading, to the satisfaction of the Planning Secretary. Otherwise train loading will occur between 7am and 10pm Monday to Friday

TRAFFIC ASPECTS AND IMPACTS TABLE		
Aspect	**Impact assessment**	**Control measure**
Night time train loading procedure	Adverse noise impact	If Daracon intends to load trains outside the hours of 7am to 10pm, the following will occur: • At least 12 hours prior to loading a train outside the hours of 7am to 10pm, Daracon will notify the local residents of this expected activity; • This notification may take the form of a verbal or written notification; • A register will be kept of all residents notified; • A record of train loading start and finish times will be maintained; • If a complaint is received, this will be dealt with using Daracon's incident notification process and in accordance with the Consent; • All out of hours train loading activities will be reported in the Annual Report provided to DPE and the CCC;

6. MONITORING, REVIEW AND IMPROVEMENT

6.1 Inspection and Review

The Quarry Supervisor shall monitor performance of the traffic control facilities to confirm the effectiveness of methods, equipment and controls. Results shall be recorded and opportunities for improvement recommended to the Quarry Manager.

The TTMP and associated documentation shall be formally reviewed by the Quarry Manager each month in the early stages of the contract and at minimum twelve (12) monthly intervals thereafter. Formal reviews shall be recorded.

Any alterations to the TTMP shall be recorded according to the document control procedure.

Additionally, any revisions to the TTMP will require the approval of the Secretary (Department of Planning and Environment - DPE) before being implemented.

6.2 Audit

Internal conformance audits will be carried out on the relevant processes and subcontractors in accordance with the master audit schedule. Auditors shall be suitably qualified and independent of the processes being assessed.

Road Safety Audits (RSA's) will be conducted by external organisations with the appropriate skills and qualifications for such. The RSA's will be completed in accordance with the consent or as directed by the DPIE.

By 31 December 2025 or within five years of commencing quarrying operations in the Extension Area (whichever is the latter), Daracon will undertake a Road Safety and Condition Audit for the development, to the satisfaction of the Planning Secretary. This audit must:
(a) be prepared by a suitably independent and qualified expert/s whose appointment has been approved by the Planning Secretary;
(b) be prepared in consultation with the TfNSW and Council;
(c) assess the safety, performance and condition of the Ardglen Street (Main Street)-New England Highway intersection and the quarry access route; and
(d) identify any road works that are required to comply with relevant AUSROAD standards or other relevant TfNSW or Council requirements.

Within 12 months of completing the Road Safety and Condition Audit required under condition 34 of this Schedule, unless otherwise agreed by the Planning Secretary, Daracon will undertake (and complete) any road works recommended in the Audit, to the satisfaction of the relevant roads authority (i.e. TfNSW or Council). If there is a dispute about the implementation of these measures, then Daracon may refer the matter to the Planning Secretary for resolution.
Please see Appendix C for a summary of the 2018 RSA including actions and timeframes completed.

7. RECORDS AND REPORTING

The following records and reporting shall be kept as evidence of the implementation and performance of the traffic management facilities in accordance with the Approval:

1. (a) keep records of the:
   - amount of quarry materials imported onto the site each calendar year;
   - amount of quarrying products transported from the site each calendar year;
   - number of truck movements generated by the development on an hourly basis on any days in which truck loading and distribution occurs;
   - registration plate details and time of departure for all laden trucks dispatched from the quarry;
   - number of train movements generated by the development, on a weekly basis;
   - date and time of each train movement generated by the development;

   (b) provide annual production data to MEG using the standard form for that purpose; and
   (c) include these records in the Annual Review.
2. Annual reporting:
   - By the end of March in each year after the granting of the development consent, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary.

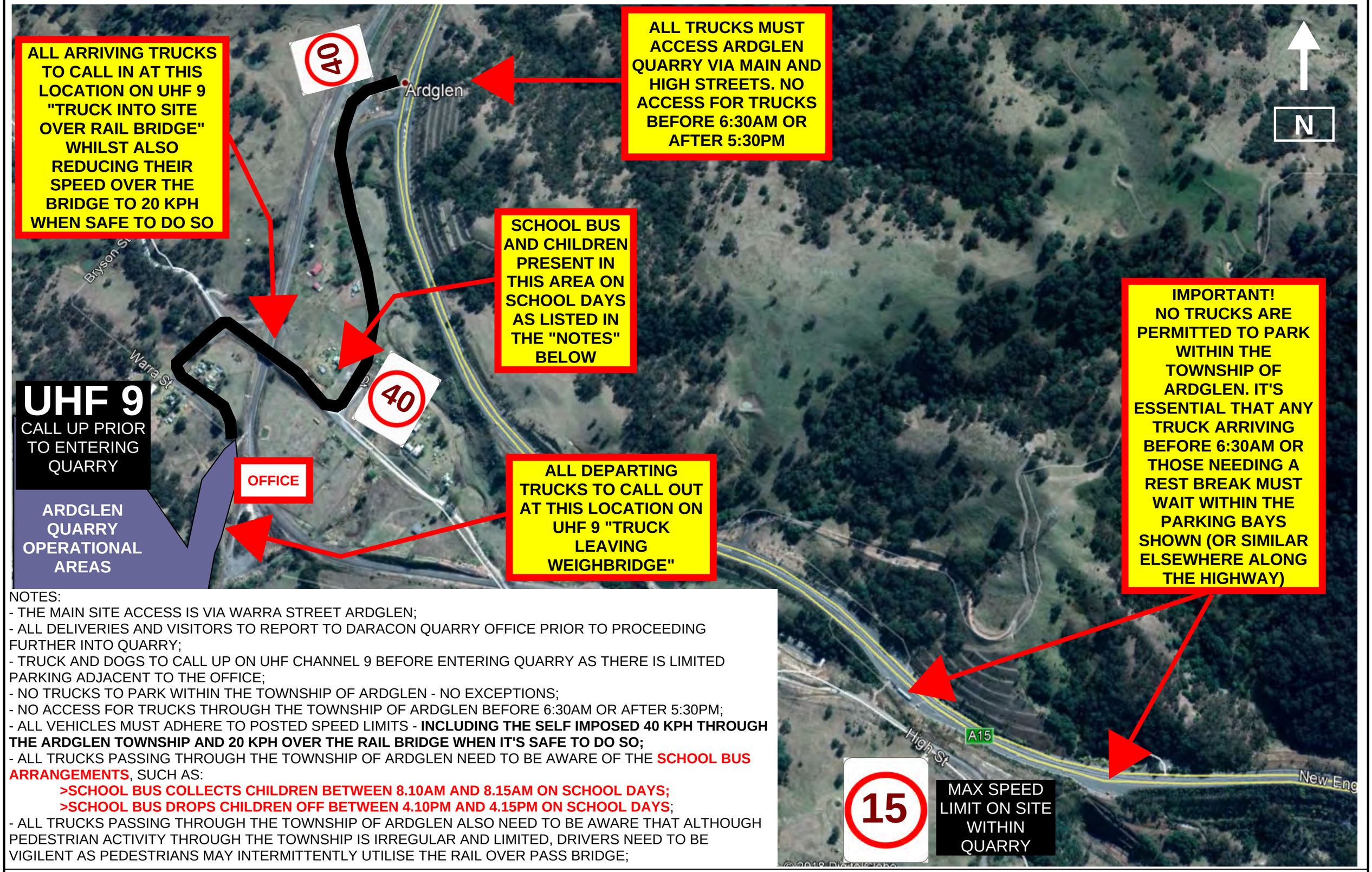
3. Access to information:
   - Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Daracon will:
   - (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and
   - (b) put a copy of the relevant document/s on its website.

   During the development, the Daracon will:
   - (a) include a copy of this consent, as may be modified from time to time, on its website;
   - (b) provide a full summary of monitoring results required under this consent on its website; and
   - (c) update these results on a regular basis (at least every 6 months).

4. Public relations initiatives and ongoing discussion with the Community Consultation Committee (CCC) as required;
   - Daracon will operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Planning Secretary, in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019).
   - Annual Newsletters to adjacent residents
5. Monitoring reports (including RSA's) in accordance with Section 6.2
6. Incident reports and corrective action:
   - Daracon will immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.
   - Within seven days of becoming aware of a non-compliance, the Daracon will notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.
   - Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

8. APPENDICES

8.1 Appendix A - VMP's

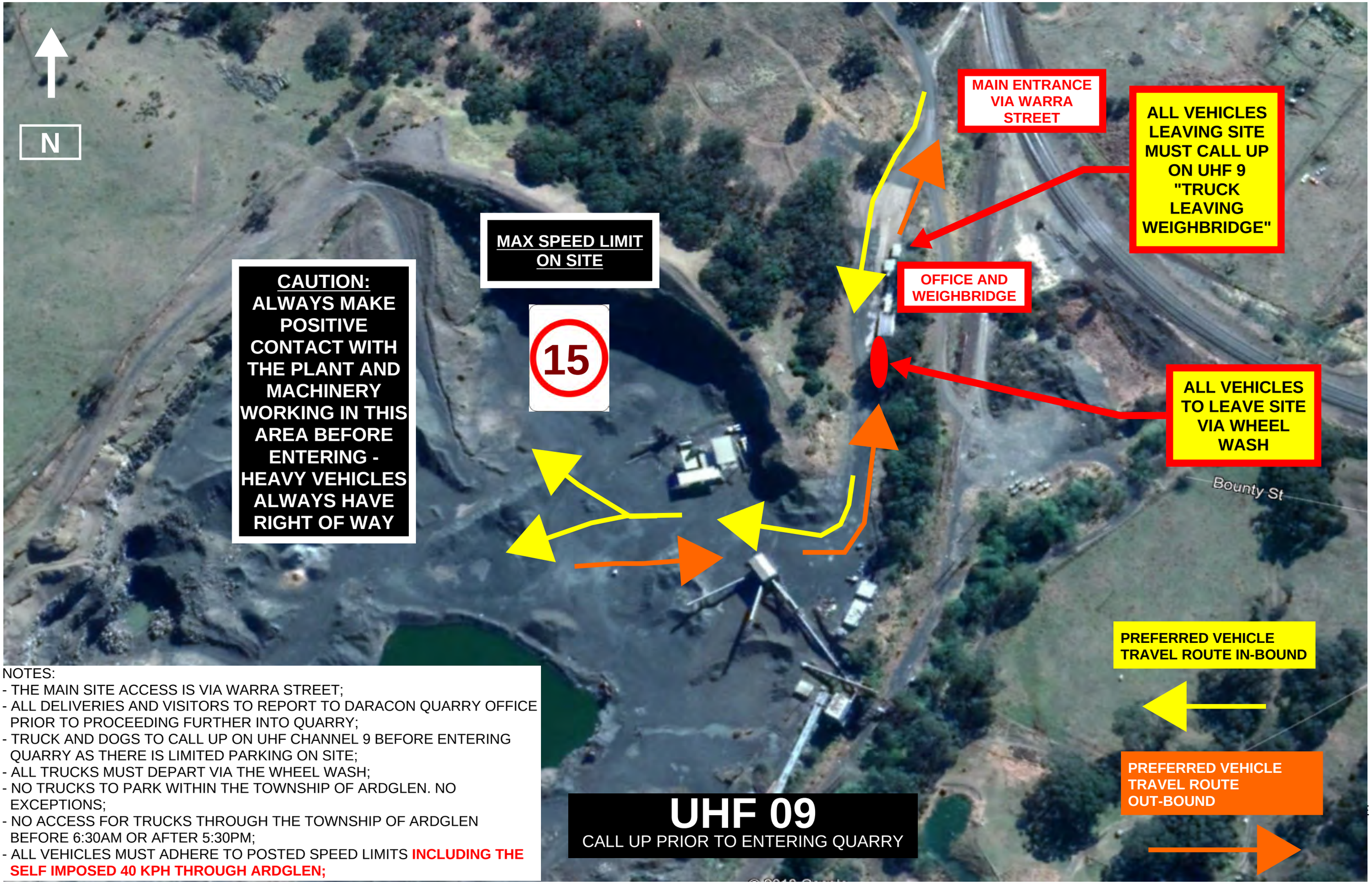


NOTES:
- THE MAIN SITE ACCESS IS VIA WARRA STREET ARDGLEN;
- ALL DELIVERIES AND VISITORS TO REPORT TO DARACON QUARRY OFFICE PRIOR TO PROCEEDING FURTHER INTO QUARRY;
- TRUCK AND DOGS TO CALL UP ON UHF CHANNEL 9 BEFORE ENTERING QUARRY AS THERE IS LIMITED PARKING ADJACENT TO THE OFFICE;
- NO TRUCKS TO PARK WITHIN THE TOWNSHIP OF ARDGLEN - NO EXCEPTIONS;
- NO ACCESS FOR TRUCKS THROUGH THE TOWNSHIP OF ARDGLEN BEFORE 6:30AM OR AFTER 5:30PM;
- ALL VEHICLES MUST ADHERE TO POSTED SPEED LIMITS - **INCLUDING THE SELF IMPOSED 40 KPH THROUGH THE ARDGLEN TOWNSHIP AND 20 KPH OVER THE RAIL BRIDGE WHEN IT'S SAFE TO DO SO;**
- ALL TRUCKS PASSING THROUGH THE TOWNSHIP OF ARDGLEN NEED TO BE AWARE OF THE **SCHOOL BUS ARRANGEMENTS**, SUCH AS:
  - **>SCHOOL BUS COLLECTS CHILDREN BETWEEN 8.10AM AND 8.15AM ON SCHOOL DAYS;**
  - **>SCHOOL BUS DROPS CHILDREN OFF BETWEEN 4.10PM AND 4.15PM ON SCHOOL DAYS**;
- ALL TRUCKS PASSING THROUGH THE TOWNSHIP OF ARDGLEN ALSO NEED TO BE AWARE THAT ALTHOUGH PEDESTRIAN ACTIVITY THROUGH THE TOWNSHIP IS IRREGULAR AND LIMITED, DRIVERS NEED TO BE VIGILENT AS PEDESTRIANS MAY INTERMITTENTLY UTILISE THE RAIL OVER PASS BRIDGE;

Revision: 08
Date: 02/08/2022

Drawn By: Luke Robinson

ARDGLEN QUARRY GENERAL SITE ACCESS PLAN



NOTES:
- THE MAIN SITE ACCESS IS VIA WARRA STREET;
- ALL DELIVERIES AND VISITORS TO REPORT TO DARACON QUARRY OFFICE PRIOR TO PROCEEDING FURTHER INTO QUARRY;
- TRUCK AND DOGS TO CALL UP ON UHF CHANNEL 9 BEFORE ENTERING QUARRY AS THERE IS LIMITED PARKING ON SITE;
- ALL TRUCKS MUST DEPART VIA THE WHEEL WASH;
- NO TRUCKS TO PARK WITHIN THE TOWNSHIP OF ARDGLEN. NO EXCEPTIONS;
- NO ACCESS FOR TRUCKS THROUGH THE TOWNSHIP OF ARDGLEN BEFORE 6:30AM OR AFTER 5:30PM;
- ALL VEHICLES MUST ADHERE TO POSTED SPEED LIMITS **INCLUDING THE SELF IMPOSED 40 KPH THROUGH ARDGLEN;**

Revision: 07
Date: 02/08/2022

Drawn By: Luke Robinson

ARDGLEN ON SITE VEHICLE MOVEMENT PLAN

8.2 Appendix B - Drivers Code of Conduct (CoC)

Code of Conduct - Ardglen Quarry

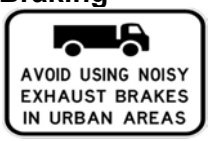
(Truck & Dog, Ex-Bin & Sub-Contractors)

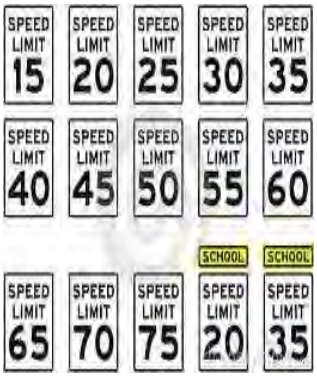
The Code of Conduct has been established to minimise the impact of our operations on the environment and the local community whilst also providing our customers with a high quality, reliable and safe service.

All persons travelling to and from Ardglen Quarry must adhere to the rules detailed in this document.

Please ensure all persons attending Ardglen Quarry read understand and sign this form and return it to the Daracon representative – or email: feedback@daraconquarries.com.au

Times	Opening time of Ardglen Quarry is as follows: ▪ Monday to Friday **6:30am** to **5:30pm.** ▪ Saturdays **6:30am** to **5:30pm** (as required)
Access	Daracon Group has Voluntarily limited our truck movements through the following areas:- ▪ No quarry trucks to travel through the township of Ardglen prior to **6:30am**; ▪ No quarry trucks are permitted to park in the township of Ardglen; It is compulsory for all trucks leaving the Ardglen Quarry site to drive through the wheel wash before departing site.
Illegal and Unsafe Truck Parking	Trucks parking up prior to Quarry opening time within the township of Ardglen is **STRICTLY FORBIDDEN!** Trucks heading North bound from the Murrurundi side of the quarry are permitted to wait within the parking bays located at the top of the range before 6:30am. Trucks heading South bound from the Willow Tree side of the quarry will need to find alternate parking arrangements prior to 6:30am.

Heavy Vehicle Compression Braking  	Compression braking by heavy vehicles is a source of irritation to the community generating many complaints. Brakes must be applied so as not to create excessive noise that could disturb local residents. Compression braking within the township of Ardglen or any residential areas / isolated residences will **ONLY** be used if required for safety reasons!
Load covering and Restraint (as per NHVL and CoR Regulations) 	All trucks arriving to or departing from the site (whether loaded with ***material or not***) are required to have an effective cover over their load for the duration of the trip. The load cover can be removed upon arrival at the delivery site and immediately prior to loading at the quarry. The driver must ensure that all loose debris from the vehicle body, drawbars and wheels (including dual tyres) is removed prior to leaving the quarry site and again after unloading. Drivers must ensure that following loading and tipping that the tailgate is locked before leaving the site. Drivers needs to ensure that their loads are secured as per the NTC Load Restraint Guide 2018 and checks are completed on restraint equipment such as tailgates, chains, straps, ratchet dogs, tarps etc on a regular basis to ensure they are functioning correctly. ***"Drivers must exit their Truck to inspect the above every time they are loaded at the quarry and following delivery of material"*** Plant and Equipment being transported to and from the quarry must be thoroughly washed and cleaned before being transported (for example all rocks and material removed from crushers and other equipment). The security of your load, your life and the life of others, relies on proper load restraint practices.
Mass and Dimension (As per NHVL and CoR Regulations)	All drivers need be aware of the following: ▪ That adhering to legal axle and gross weight limits are their responsibility and these need to be confirmed before proceeding with the load (via weighbridge or alternate means). ▪ All trucks attending the quarry must adhere to the various weight and dimension limit / restrictions that apply to the various approach routes. These include load limits applicable to roads and bridges that must be complied with.
Fatigue and licence requirements (As per NHVL and CoR Regulations)	All drivers need be aware of the following: ▪ Drivers must adhere to the relevant "work and rest" restrictions applicable (standard, BFM or otherwise) whilst operating out of the quarry. ▪ Drivers must record the relevant information regarding "work and rest" times in accordance with the specific requirements. ▪ Drivers will be adequately rested before commencing work. Never drive while fatigued. Safe driving rosters must be designed so that you can have adequate rest breaks to minimise fatigue and to comply with relevant regulations. ▪ If your driver's licence is suspended or cancelled for any reason, you must advise management immediately.

Speed Limit  	Drivers are to observe the posted speed limits, with speed adjusted appropriately to suit the road environment and prevailing weather conditions, to comply with the Australian Road Rules. The vehicle speed must be appropriate to ensure the safe movements of the vehicle based on the vehicle configuration. Specific speed limits also apply to the following areas:- Within Quarry: **15 kph** unless signposted otherwise. Township of Ardglen: **40 kph** between the New England Highway and the quarry entrance (both inbound empty and outbound loaded). Over the rail bridge **20 kph** where it is possible and safe to do so, we suggest all trucks do not exceed 20 kph when driving in either direction over the rail bridge.
Signs 	Drivers are to obey signage within the Quarry and comply with the Australian Road Rules and **REMAIN** on Vehicle routes (per Vehicle Management Plans) Heavy Quarry Traffic **ALWAYS** has ***"Right – Of – Way".*** Empty trucks **MUST** "Give way" to Loaded trucks leaving the Quarry. Please pay particular attention when leaving:- ▪ The wheelwash and past the weighbridge as loaded trucks will always have priority through this area; ▪ Through the township of Ardglen as there are areas with restricted vision; ▪ Vehicle movement plans show the preferred travel routes, signage and speed limits;
Personal Protective Equipment (PPE)	The wearing of Hi-Vis "Long Long" Clothing is **COMPULSORY!** "Long Longs" is an Industry Standard and many of our Clients have this Policy in place and expect us and our contractors to comply with their Policy requirements at all times! Long Longs allows Daracon Group to meet their 'Duty of Care' in providing suitable protective clothing with respect to working outdoors (sun protection). Long Longs provides for physical protection (e.g. Protection against Chemical exposure, Sharp and Hot objects and Insect / Vermin / Snakes / Spiders) and may assist in reducing minor injuries. Approved "High Visibility" clothing or "High Visibility" vests are to be worn at all times by All workers and Visitors on site! Vests are to be worn in the correct fashion and securely fastened at all times to ensure legislative compliance. The **"Mandatory Protective Clothing"** requirement on this site is: ▪ Hard Hat (AUS Standard). ▪ Hi-Vis vest or Hi-Vis Shirt. ▪ Long Sleeves and Collared shirt. ▪ Long Pants (Cotton Drill or Denim). ▪ Safety Boots (Steel Cap). ▪ Safety Glasses.

	This is a requirement under our sun Protection Policy / Procedure. Daracon advises that safety eyewear will be used to protect against dust and airborne particles whilst working on site. “Tinted” safety glasses (not fashion sun glasses) are appropriate for outdoor work and “Clear or Amber” for indoor work. **Note:** ▪ Gloves are to be worn for “Manual” tasks unless risk assessment indicates they will create a hazard. ▪ Any PPE specified in an SWMS/RA that is required to be worn when carrying out a particular task MUST be worn!
Caution! 	Beware of: ▪ When turning off the New England Highway, all drivers need to indicate and start slowing early for the turn into the township of Ardglen. ▪ Access restrictions and visibility into the quarry site. ▪ HEAVY VEHICLES ALWAYS HAVE RIGHT OF WAY, NO EXCEPTIONS. ▪ Give way to the Water Cart and other operational vehicles. ▪ All vehicles to maintain positive contact with all operating plant and machinery via UHF 9 when on site. ▪ Seat belts are to be worn at **ALL TIMES** in plant and vehicles. ▪ Truck drivers **MUST** stay inside their vehicle whilst being loaded. ▪ Fighting and other forms of “Violence or Intimidation” are forbidden! ▪ Practical Jokes and Horseplay are **NOT PERMITTED** as they are potentially unsafe. ▪ Drivers need to be aware of the fact that school buses collect children from Main St Ardglen at the following times: ➢ Between 8.10am and 8.15am on school days; ➢ Between 4.10pm and 4.15pm on school days; ▪ Drivers need to be vigilant at these times due to the increased presence of pedestrians and vehicles associated with the school bus drop offs and collections; ▪ Although pedestrian activity through the township of Ardglen is irregular and limited, drivers also need to be vigilant as pedestrians can intermittently utilise the rail over pass bridge;
No Access 	Trucks & Light vehicles must: ▪ Be in road worthy condition. ▪ Have an operating orange flashing light. ▪ A working UHF Radio. *(If vehicle is not fitted with UHF radio, or flashing light then they will not be permitted on site).* ▪ Safety barricades, fencing and signs are **NOT** to be removed. When entry is required into “Protected Area” permission must be obtained from the Supervisor on site.

	▪ Truck Drivers are **NOT** authorised to operate any Quarry equipment! ▪ Any environmentally sensitive areas will be delineated and must not be accessed unless permission has been obtained from the Supervisor on site.
Park Procedure 	▪ Maintain Positive Communication with Loader Drivers at all times! ▪ Always Park so you are "Visible" to the Loader Driver and **NEVER** park or stand behind a Heavy Vehicle. ▪ **NEVER** approach the Loader until it is Stationary and the driver has signalled to you. ▪ There are "Blind Spots" for Operators of Mobile Plant - you must **NEVER** assume that an operator can see you, or that a machine will not move suddenly! ▪ When "Parked up", first movement is Forward.
First Aid 	▪ A "First Aid Kit" is located in the Weighbridge office. ▪ Daracon has 'First Aiders' onsite. ▪ Daracon Vehicles also carry a First Aid Kit. ▪ Notify Daracon Supervisor of any 1st Aid Treatments/Incidents. ▪ Incident Report and Register of Injuries to be completed when applying first aid. ▪ Map to Hospital is located in the Weighbridge. ▪ All Incidents must be reported to Supervisor/Management/HSEQ Dept.
Prohibited Items 	▪ No Children! ▪ No Pets! ▪ No Drugs! ▪ No Alcohol! ▪ No Firearms!
Communication 	**UHF Channel utilised @ Ardglen Quarry is 9.** ▪ All trucks must have a functioning UHF radio to access this site. ▪ No radio "Chit Chat" - conversations kept work related, short and precise. ▪ All vehicles **MUST** announce their location at all designated "call up points" Other various call up points are: ▪ As trucks are approach site and are driving over the bridge over the rail line (High St), they musty announce "Truck into site over rail bridge"; ▪ As trucks leave the weighbridge they must announce "Truck leaving weighbridge"; ***Note:*** Internal information has been getting broadcast on the UHF and CB radios, this practice is absolutely unacceptable and those engaging in such activity **MUST REFRAIN** from doing so immediately. Examples of company information include (but is not limited to): ▪ Operational information including Workload and Quarry activities. ▪ Internal Procedures. ▪ Notifications sent from Management via Navman. ▪ Toolbox Information.

	UHF / CB channels **ARE NOT PRIVATE** and the general public have access to the same channels. Failure to comply with this request will result in disciplinary action that could result in Termination of Employment or Contract. Consideration will also be given to the topics and manner that information is discussed; it is conceivable that a member of the public can take action against you personally if they are offended by the discussion or comments made. **No inappropriate or offensive language to be broadcast on the UHF – EVER.**
Mobile Phone Usage 	▪ The use of a mobile phone while operating machinery or undertaking site activities is STRICTLY PROHIBITED. Driving, operating or undertaking high risk activities must be temporarily ceased to take the call. ▪ Persons authorised to use a mobile phone and who are required to make or receive a call near any type of work activity or mobile plant must walk to a safe area to take the call. ▪ Mobile phones are not to be used via any mechanism when in high risk areas such as the stockpiles, heavy vehicle haul roads, quarry pit etc). ▪ Persons authorised to use a mobile phone on site who are working in a potentially hazardous area (e.g. confined space, high traffic area) or carrying out a potentially hazardous task (e.g. acting as a spotter, traffic control) MUST TURN OFF their mobile telephones while carrying out these duties. ▪ When a call or text message is received while driving and a hands-free kit is not available or the hands free kit is not voice activated, the driver MUST pull to the side of the road when safe to do so prior to taking the call or checking the text message. ▪ Where a conversation is complex or technical or requires notes to be taken it is mandatory to pullover when safe to do so to continue the conversation. ▪ Any person contravening this Policy will be subject to the Company's disciplinary procedure. ▪ The use of a phone to take photographs on site is also strictly forbidden unless specifically authorised by the Site Supervisor.
Alcohol and Drug Testing 	▪ Daracon has the right to conduct Alcohol and other Drug testing involving all persons working for the company or on premises. ▪ Daracon requires all persons to be in a "fit for work" state. This means persons must not be affected by alcohol or other drugs whilst at work. ▪ It is prohibited for any person to possess, use, sell or work under the influence of Alcohol or other Drugs. If you are working on a Daracon site, you are required to co-operate in the random selection and testing process. ▪ Disciplinary action will be taken against individuals (and their Company, in the case of subcontractors) in the case of positive and repeat positive tests or refusing to undertake tests.
Emergency 	▪ In the event of an emergency,3 Horn Blasts will be sounded; or ▪ Personnel will be alerted via UHF radio (Channel 9) saying 'Emergency, Emergency, Emergency'. ▪ Inform Site Daracon Representative of Emergency Immediately!!! ▪ Do not put yourself in danger attending to an Emergency. ▪ Follow the directions of the Daracon Site Representative. ▪ If directed, move to Emergency Muster Area at Weighbridge! ▪ No persons are permitted to Enter/Leave site until All-Clear is given. ▪ In case of Bush Fire, move to the weighbridge!

Contacts	▪ Site Supervisor: Scott Brown 0437 092 342 ▪ Transport Supervisor (Truck & Dog): Scott Brown 0437 092 342 ▪ Quarry Sales Manager: Amy Mackay 0477 042 660 ▪ Beresfield Quarry Office: (02) 4974 9200 ▪ Emergency: 000
Performance and Complaints Handling	▪ All drivers need to be aware that the future of the quarry and to a certain extent, their livelihood, depend heavily on responsible and courteous driving by all. Please consider this at all times when driving to and from the quarry; ▪ Residents, Motorists, Cyclist and Pedestrians are encouraged to telephone (02) 4974 9200 or email: feedback@daraconquarries.com.au to lodge a complaint or provide positive feedback; ▪ All Complaints will be investigated and response provided to the complainant within a reasonable timeframe; ▪ All personnel are **REQUIRED** to report incidents to Weighbridge by any means. These will be collated and provided to the NSW Police when required; ▪ If a driver is found to breach this Code of Conduct (CoC), they will receive disciplinary action which will include one or more of the following: ➢ The driver will be provided with a warning and will be re-introduced into the CoC; ➢ The driver being precluded from site; ➢ De-registration from the Daracon system entirely in the case of a subcontractor;

DECLARATION

I, the undersigned, hereby agree to abide by Daracon Group Truck Driver Code of Conduct for the transportation of Quarry products from Ardglen Quarry, to their final destination/s in a safe manner. I have read and understand the requirements outlined in the attached document and will, to the best of my ability, comply and assist with their implementation, requirements and ongoing administration.

The commitment to which this declaration relates is attached as part of the overall document and signing of this declaration confirms that the signatory has read and understood the entire document:

Contracting Company Name:	
Employee Name:	
Employee Signature:	
Date:	

Disciplinary action will be taken against drivers who do not adhere to this Code of Conduct!

(images used for illustrative purpose only)

8.3 Appendix C – 2018 Road Safety Audit summary

Table 1 – Ardglen Quarry Road Safety Audit (RSA) – Summary of responses March 2022

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
1	Intersection of Main Street and New England Highway Northbound and Southbound Delineation	The approach to the intersection of Main Street and New England Highway is missing delineation (i.e. RRPM's) and has faded line marking. This may increase the likelihood of readability issues for a driver. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s).	RMS Response – New England Highway (NEH) work will be addressed by works for Daracon	Mostly complete with essential delineation re-instated along New England Highway (NEH) by RMS prior to July 2019. Main Street Ardglen delineation installed on the 11th July 2019 by Daracon. All as shown in the images.		We're currently planning to complete this task concurrently with the 'Access Road upgrade' which is being developed in consultation with LPSC. This will be completed before we increase laden truck movements in accordance with the Approval.
2	New England Highway Southbound Delineation	The existing right turn bay into Main Street is missing right turn pavement arrows, which may lead to readability issues for approaching vehicles. The likelihood of this risk may increase at night and / or adverse weather conditions. This may confuse oncoming drivers for the purpose of lane and cause late lane change decisions. This may result in vehicle crashes and injury to occupants of a vehicle(s).	RMS Response – **RMS to install missing Right Turn Arrows**. RMS to arrange to be included in this year's AC linemarking program.	Completed by RMS prior to July 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
3	New England Highway Southbound Traffic signs	The advanced warning signage on approach to Main Street appears damaged, does not provide advanced warning to approaching vehicles, and has a reduced readability due to sightlines being obscured on the horizontal curve approach. This may lead to driver confusion and increase the likelihood of drivers slowing too early prior to the intersection and may result in vehicle crashes and serious injury to occupants of a vehicle(s).	RMS Response – **RMS to repair signs** from Routine Maintenance	Completed by RMS prior to July 2019.		N/A
4	Intersection of Main Street and New England Highway Northbound and Southbound Delineation and Road pavement	At the intersection New England Highway and Main Street there is a combination of damaged / deformed pavement, loose gravel in the mouth of the intersection and faded delineation. The faded delineation may cause drivers readability issues. The loose gravel and damaged pavement may increase the likelihood of vehicles being unable to gain the required traction when entering Ardglen Road from New England Highway. The likelihood of this risk may increase during adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	RMS Response – New England Highway (NEH) work will be addressed by works for Daracon.	Partially complete with essential delineation re-instated along New England Highway (NEH) by RMS prior to July 2019 as shown in Item (1) above. Loose gravel removed by Daracon on 3rd April 2019. Daracon continues to monitor for damage and /or further deterioration of the pavement in this area and repairs as required in accordance with the current maintenance arrangement with Liverpool Plains Shire Council (LPSC).		We're currently planning to complete this task concurrently with the 'Access Road upgrade' which is being developed in consultation with LPSC. This will be completed before we increase laden truck movements in accordance with the Approval.
5	Main Street South of the Intersection on the outside of the curve Northbound Road pavement	At the Main Street / rail site compound access and in front of the existing w-beam safety barrier there is loose gravel on the outside of the horizontal curve. This may lead to reduced skid resistance for an errant vehicle. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, the loose gravel on the outside of the curve will be removed by appropriate means by Daracon.	Daracon completed this on the 3rd April 2019 with street sweeper on site. Additional gravel removal on the 11th July 2019 before the line marking was installed		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
6	Main Street – South of the intersection of New England Highway Northbound and Southbound Roadside hazards	200m along Main Street from the intersection of New England highway, there is an existing culvert with steep embankments within the clear zone. The combination of narrow shoulder widths, steep batters, culvert headwalls within the clear zone, may limit a driver's manoeuvrability to avoid striking an object or have a reduced ability to gain control of their vehicle and strike objects within the clear zone. Narrow shoulders may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may increase the likelihood of drivers encroaching into the opposing travel lane and / or vehicles driving within the road shoulder / verge area to avoid a stationary object on the road. This may result in drivers striking the object or another object within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install a temporary barrier (type F concrete or similar) to highlight the presence of the existing culvert and minimise the likelihood of interaction with the roadside hazard. Subject to the ongoing operation of the quarry, Daracon may choose to install a permanent barrier (guardrail or similar) at some time in the future.	Effectively complete with the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks was imposed immediately. On the 11th July 2019, additional controls were installed to highlight the presence of the culvert. These additional controls were the extension of the line marking and installation of extra guideposts as shown in the image.		The inclusion of guardrail at this location is currently within the proposed 'Access Road upgrade' design recently approved by LPSC, the addition of guardrail at this location will permanently resolve this issue. This will be completed before we increase laden truck movements in accordance with the Approval.
7	Main Street – Rail site compound access Northbound Road alignment and cross section and delineation	Approximately 150m from the intersection of New England Highway along Main Street there is an access track to a rail site compound. At the access there is a lack of delineation on the horizontal curve. This may give the oncoming driver the impression that the Main Street continues through rather the traveling to the right, especially at night. This may cause a driver to make a late change in direction. The combination of loose gravel on the outside of the curve and the late change in direction may result in crashes with other vehicles and result in injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install additional guide posts (or similar) to delineate the outside of the horizontal curve.	Completed on the 26th March 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
8	Main Street Northbound and Southbound Road pavement And Road alignment and cross section	The road carriageway width does not appear suitable for vehicles to pass (i.e. trucks passing other trucks and / or cars). The travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming objects or another object within the clear zone and lead to rapid deceleration of the vehicle. This may result in injury to occupants of a vehicle(s).	Please also refer to LPSC point #2 below. Although the AADT would be less than 300 vehicles per day including the quarry operating at 500,000T by road per year as proposed (approximately 60 outbound and 60 inbound truck movements), it was agreed with LPSC to install additional line marking only at the curves either end of Main St. The straight section of Main St will remain with no line marking. All existing line marking will also be renewed if not completed recently by LPSC. An additional control that has been implemented is the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks.	Completed on the 11th July 2019.		N/A
9	Main Street Intersection with Ardglen Road Northbound and Southbound Traffic signs	On Main Street approach to Ardglen Road, the existing speed zone repeater signage appears faded. This may increase the likelihood of readability issues for drivers, and increase the likelihood of a driver failing to travel to the sign posted speed limit. The likelihood of this risk may increase at night and / or adverse weather conditions. This may lead to vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install new speed limit signage as the existing sign is faded.	Completed on the 20th March 2019.		N/A
10	Main Street Approaching the Intersection with Ardglen Road Northbound and Southbound Roadside hazards	On Main Road approach to Ardglen Road, there is an existing power pole and fence posts within the clear zone. Errant vehicles at these locations may have a reduced ability to gain control of their vehicle and strike the power pole or fence post within the clear zone which may lead to rapid deceleration of the vehicle. This may be due to the combination of horizontal and / or vertical alignment of the road and / or drivers swerving to avoid striking an animal (i.e. animal carcass). The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s), not limited to.	As agreed with LPSC representative, Daracon proposes to install delineation in the form of additional guideposts adjacent to the roadway to highlight the presence of the existing power pole.	Completed on the 26th March 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
11	Main Street Approaching the Intersection with Ardglen Road Northbound and Southbound Pavement	Approximately 65m along Main Road from the intersection of Main Road and High Road, there is loose gravel on the outside of the horizontal curve. This may lead to reduced skid resistance for an errant vehicle. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, the loose gravel on the outside of the curve will be removed by appropriate means by Daracon.	Completed on the 3rd April 2019 with street sweeper on site. Additional gravel removal occurred on the 11th July 2019 before the line marking was installed.		N/A
12	Main Street Intersection with High Street Delineation	At the intersection of Main Street and High Street, the existing delineation is faded. This may lead to readability issues for a driver and increase the likelihood of a vehicle failing to give way at the intersection. The likelihood of this risk may increase at night and / or adverse weather conditions. This may lead to vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to refresh the existing line marking.	Completed on the 11th July 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
13	Main Street Intersection with High Street Westbound Traffic signs	Approaching the intersection of Main Street and High Street from the south eastern side traveling west there is a missing Stop sign. This may increase the likelihood of readability issues for drivers and lead to drivers failing to stop to oncoming vehicles. This may increase the likelihood of vehicle crashes, especially during adverse weather conditions. This could lead to crashes with other vehicles, thus may result in serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to reinstate the existing stop sign.	Completed on the 20th March 2019.		N/A
14	High Street Approach to St Stephen Street intersection Westbound Traffic signs	On the south eastern side of the intersection of High Street and St Stephen Street, the advanced warning of T-intersection signage is loose, which has caused the sign to point in the wrong direction. This may increase the likelihood of readability issues for drivers and lead to drivers failing to negotiate the intersection. This may increase the likelihood of vehicle crashes, especially during adverse weather conditions. This could lead to crashes with other vehicles, thus may result in serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to reinstate the existing T intersection sign.	Completed on the 26th March 2019.		N/A
15	High street Rail overpass bridge Eastbound and Westbound Road alignment and cross section	Traveling west along High Street towards the rail overpass bridge, the travel lanes appear to narrow and there is a kink in the alignment of the road. The narrow travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming vehicles or safety barriers and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	As agreed with LPSC representative, all existing line marking will be renewed if not completed recently by LPSC. An additional control that has been implemented is the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks. Appropriate delineation already exists along the guardrail.	Self-imposed 40 kph speed limit imposed immediately. The line marking was completed on the 11th July 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
16	High Street Approach to St Stephen Street Intersection Eastbound and Westbound Delineation	At the intersection of High Street and St Stephen Street, the existing delineated is faded. This may lead to readability issues for a driver and increase the likelihood of a vehicle failing to give way / stop at the intersection. The likelihood of this risk may increase at night and / or adverse weather conditions. This may lead to vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, all existing line marking will be renewed by Daracon if not completed recently by LPSC.	Completed on the 11th July 2019.		N/A
17	St Stephen Street Northbound and Southbound Road alignment and cross section	The road carriageway width along St Stephens Street does not appear suitable for vehicles to pass (i.e. trucks passing other trucks and / or cars). The travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming vehicles or objects within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon will consult with the three residents along Warra and St Stephen Streets to discuss the potential installation of convex mirrors at strategic locations and will install as agreed. Daracon has also implemented a self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance as well as a mandatory "call up" protocol for St Stephens and Warra St's as detailed in the TTMP.	Complete with the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks was imposed immediately. The call up protocol for St Stephens and Warra St's was also implemented immediately as detailed in the TTMP. The residents along Warra and St Stephens St were also consulted with and agreed that the installation of "convex mirrors" located in strategic locations would assist to mitigate the issues identified. The "convex mirrors" were installed on the 15th August 2019 as shown in the images.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
18	St Stephen Street Intersection with Warra Street Northbound and Southbound Road alignment and cross section And Road Pavement	Traveling along St Stephens Street towards Warra Street there is deteriorated / damaged pavement with excessive road cross fall, narrow lane widths and sight distance restrictions. The combination of all the above elements may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming objects or another object within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	Refer to RSA CAR #17.	Refer to RSA CAR #17.		N/A
19	Warra Street Northbound and Southbound Road alignment and cross section	The road carriageway width along Warra Street does not appear suitable for vehicles to pass (i.e. trucks passing other trucks and / or cars). The travel lane widths may limit a driver's manoeuvrability and increase the likelihood of readability issues to oncoming vehicles. Narrow travel lane may also limit the available road width for wide vehicle loads and restrict vehicles in the opposing direction. This may result in drivers striking oncoming vehicles or objects within the clear zone and lead to rapid deceleration of the vehicle. This may result in serious injury (not limited to) to occupants of a vehicle(s).	Refer to RSA CAR #17.	Refer to RSA CAR #17.		N/A
20	Warra Street Near the quarry entrance Southbound Pavement And Road alignment And cross section	Near the entrance to the quarry and part of Warra Road the existing pavement is deteriorated and shoulder show evidence of erosion. This may lead to soft shoulders and may be unstable for heavy vehicle to use if divers need to move their vehicle to avoid oncoming traffic. This may result in injury to occupants of a vehicle(s), not limited to.	As agreed with LPSC representative, Daracon proposes to investigate and repair the shoulder as described in the RSA.	Completed 20th March 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
21	Warra Street Northbound and Southbound Roadside hazards	Along Warra Street the auditors observed trees within clear zone as well as narrow carriageway. Errant vehicles at these locations may have a reduced ability to gain control of their vehicle and strike the trees within the clear zone which may lead to rapid deceleration of the vehicle. This may be due to the narrow carriageway width of the road and / or drivers swerving to avoid striking oncoming vehicles. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s), not limited to.	As agreed with LPSC representative, Daracon proposes to install delineation in the form of additional guideposts adjacent to the roadway to highlight the presence of the trees. Daracon has implemented a self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance as well as a mandatory "call up" protocol for St Stephens and Warra St's as detailed in the TTMP.	Completed on the 26th March 2019.		N/A
22	Warra Street Northbound and Southbound Roadside hazards	Approximately 50m from the entrance of the quarry there is an existing culvert headwall with drop-off within the clear zone. Errant vehicles at these locations may have a reduced ability to gain control of their vehicle impact with the existing headwall and / or surrounding objects within the clear zone. This may be due to the narrow carriageway width of the road and / or drivers swerving to avoid striking oncoming vehicles. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install a temporary barrier (type F concrete or similar) to highlight the presence of the existing culvert and minimise the likelihood of interaction with the roadside hazard. Additionally, **LPSC have committed to investigating the option of extending the existing storm water pipe** to permit widening of the formation thus eliminating the roadside hazard.	The self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks was imposed immediately. The call up protocol for St Stephens and Warra St's was also implemented immediately as detailed in the TTMP. Temporary delineation was installed on the 1st April 2019 as shown in the image. These are considered appropriate short term rectification measures due to the fact that this location exists beyond the section of Warra St that requires private vehicular access and only quarry traffic utilises this section of road.		The widening of the culvert and embankment as well as the inclusion of guardrail at this location is currently within the proposed 'Access Road upgrade' design recently approved by LPSC, the widening of the embankment and addition of guardrail at this location will permanently resolve this issue. This will be completed before we increase laden truck movements in accordance with the Approval.

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
23	Warra Street Quarry entrance Northbound and Southbound Road alignment and cross section	At the site entry of the quarry, the entry appears narrow, lack of carriageway width for drivers to turn around as well as lack of restriction signage / no through road. This may lead to diver frustration and confusion which may contribute to diver error. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and serious injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon has implemented a self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance as well as a mandatory "call up" protocol for St Stephens and Warra St's as detailed in the TTMP.	The self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks was imposed immediately. The call up protocol for St Stephens and Warra St's was also implemented immediately as detailed in the TTMP. Additional "no entry" and "no through road" signage was installed on the 11th July 2019.	 	N/A
24	Warra Street Northbound and Southbound Delineation	It was noted that along Warra Street there is a lack of delineation. This may increase the likelihood of readability issues for drivers. The likelihood of this risk may increase at night and / or adverse weather conditions. This may result in vehicle crashes and injury to occupants of a vehicle(s).	As agreed with LPSC representative, Daracon proposes to install delineation in the form of additional guideposts adjacent to the roadway.	Completed on the 11th July 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
LPSC #1	Either side of the rail overpass bridge	The two 'T' intersections either side of the rail overpass bridge are not your normal 'T' intersections in that the approach roads to the top of the 'T' have right away, whereas the thru road normally has right of way. Whilst 'Give Way' and 'Stop Signs' along with line marking (that needs maintaining) exists, I think advance warning 'Give Way Sign Ahead' and 'Stop Sign Ahead' signs (W3-1B and W3-2B) should be considered to forewarn road users along High Street and Swinging Ridges Road as the thru road(s).	Daracon agree to install additional advance warning 'Give Way Sign Ahead' and 'Stop Sign Ahead' signs (W3-1B and W3-2B) to forewarn road users along High Street and Swinging Ridges Road as the thru road(s)	Completed on the 20th March 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
LPSC #2	Main Street	There is no centreline delineation along the Ardglen Road (it is being called Main Street in the RSA). High Street has centreline marking (albeit it is very faded and needs redoing). Given there are 2 curves along the Ardglen Road, the RSA should identify the lack of centreline marking along this road in greater detail.	Although the AADT would be less than 300 vehicles per day including the quarry operating at 500,000T by road per year as proposed (approximately 60 outbound and 60 inbound truck movements), it was agreed with LPSC to install additional line marking only at the curves either end of Main St. The straight section of Main St will remain with no line marking. All existing line marking will also be renewed if not completed recently by LPSC. An additional control that has been implemented is the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks.	Completed on the 11th July 2019.		N/A
LPSC #3	Main Street	The advance 'T' junction warning sign on Ardglen Road on approach to High Street does not depict the road alignment on approach to the intersection. The approach to the intersection has a horizontal curve between the Advanced intersection Warning Sign and the intersection. The sign should be changed to a Curved Intersection (W2-14B) sign.	Daracon agrees to change the advance 'T' junction warning sign on Ardglen Road on approach to High Street to a Curved Intersection (W2-14B) sign.	Completed on the 3rd April 2019.		N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
LPSC #4	Warra Street	There is a deficiency in Safe Intersection Sight Distance (SISD) at and for the second house along Warra Street on the right as you head towards the quarry. AUSTROADS stipulates the SISD for 50km/h is 90 metres. There would only be 40m at this location. The RSA does not identify this deficiency.	Refer to RSA CAR #17.	Refer to RSA CAR #17.		N/A
Other observation #1	Main Street	Approximately 370m along Main Street from the intersection of New England Highway, the pavement surface appears deformed / subsided (near the abandoned house).	Daracon continues to monitor for damage and /or further deterioration of the pavement in this area and repairs as required in accordance with the current maintenance arrangement with Liverpool Plains Shire Council (LPSC).	Ongoing		Ongoing
Other observation #2	St Stephen Street and Main Street	There is a gap in the existing w-beam safety barrier for rail corridor access at the intersection of St Stephen Street and High Street. The auditors observed that the point of need for safety barrier may not protect an errant vehicle from the hazard at this location.	Ardglen Quarry has been operating as a hard rock quarry for over 100 years and Buttai Gravel (Daracon) has owned and operated Ardglen Quarry since 2005 after purchasing the quarry from the State Rail Authority. Sometime following Daracon's purchase of the quarry, ARTC commenced work on the construction of the rail overpass bridge which was completed sometime before 2009 (and whilst the quarry was still operating). With respect to the design and construction of the new rail overpass bridge, access road and associated structures, Daracon were not involved in the process and had no influence over the design parameters associated with the safety barriers associated with the new bridge and access roads. **However, Daracon and LPSC have recently renewed the line marking in this location which, combined with the additional signage and guideposts installed as well as the self-imposed mandatory speed limit of 40kph from the New England Highway to the Quarry entrance for all trucks, has significantly reduced the risk of an errant vehicle in this location.**	Completed on the 11th July 2019.	Note – The dirt present on the road surface (as shown in the above image) was the result of LPSC unsealed road maintanence occurring along Swinging Ridges Rd and was in no way associated with truck movements to or from Ardglen Quarry.	N/A

RSA report identification number	Location / category	Description of risk to road safety	Specific actions Daracon commit to undertake	Completion date (if complete) with comments	Evidence of completion	If not complete, status update as at 28th June 2022
Other observation #3	Rail overpass bridge	The audit makes no provision for allowing safe pedestrian access over High Street rail overpass bridge (complaint received August 2018). Provide a response action to address this issue.	Ardglen Quarry has been operating as a hard rock quarry for over 100 years. Buttai Gravel (Daracon) has owned and operated Ardglen Quarry since 2005, after purchasing the quarry from the State Rail Authority. Sometime following Daracon's purchase of the quarry, ARTC commenced work on the construction of the rail overpass bridge which was completed sometime before 2009 (and whilst the quarry was still operating). With respect to the design and construction of the new rail overpass bridge, Daracon were not involved in the process and had no influence over the design parameters associated with pedestrian movements at that location. Daracon are therefore unable to comment on the design parameters used as part of the rail bridge construction. **Although pedestrian activity through the township of Ardglen is irregular and limited, Daracon is however able to inform ALL truck drivers of the need to be vigilant to the increased presence of pedestrians and vehicles associated with the school bus drop offs, collections and also pedestrians utilising the rail bridge. Daracon are also willing to liaise with the local residents to understand and appropriately manage pedestrian movements across the bridge as required.** The Code of Conduct (CoC) and Traffic and Transport Management Plan (TTMP) were updated and resubmitted to the DPIE on the 5th August 2019.	5th August 2019		N/A

8.4 Appendix D – Liverpool Plains approval documents

Ref. Number: D22/15799
Contact: Nathan Skelly
Phone: (02) 6746 1755

Liverpool Plains Shire Council

Daracon Group
PO Box 401
BERESFIELD NSW 2322
Via email: luke.robinson@daracon.com.au

02.03.22

Dear Luke Robinson

Re: Section 138 Request – Main Street Ardglen

I refer to your application received by Council 23 June 2022 for the upgrade of Main Street Ardglen through widening works, as identified within drawing set 2021166rev3 by Constructive Solutions.

Permission is granted for the undertaking of works identified in drawings 2021166rev3 subject to the following conditions:

1. Prior to commencement, a Traffic Management Guidance Scheme developed in accordance with the RMS Traffic Control at Worksites is to be provided to Council for approval;
2. Works are completed in accordance with the approved drawing set 2021166rev3;
3. Works are to be completed in accordance with RMS M290 specification, where there is a conflict between the drawings and the specification, the drawings take precedence;
4. Compaction testing results shall be provided to Council, with testing locations randomised in accordance with RMS Q6 Annexure L;
5. Works are to be carried out by a suitably qualified contractor with appropriate Public Liability Insurance cover at a minimum of $20m;
6. All costs associated with these works are the responsibility of the land owner or applicant; and
7. Council is to be notified at the commencement, during and again at the completion of the works to allow the appropriate inspection to take place.

Provided that the preceding conditions are adhered to, this letter acts as an approval under Section 138 of the Roads Act 1993.

Should you have any questions in relation to this matter, please contact the undersigned in the first instance on (02) 6746 1755.

Yours Sincerely

Nathan Skelly
Director Infrastructure & Environmental Services

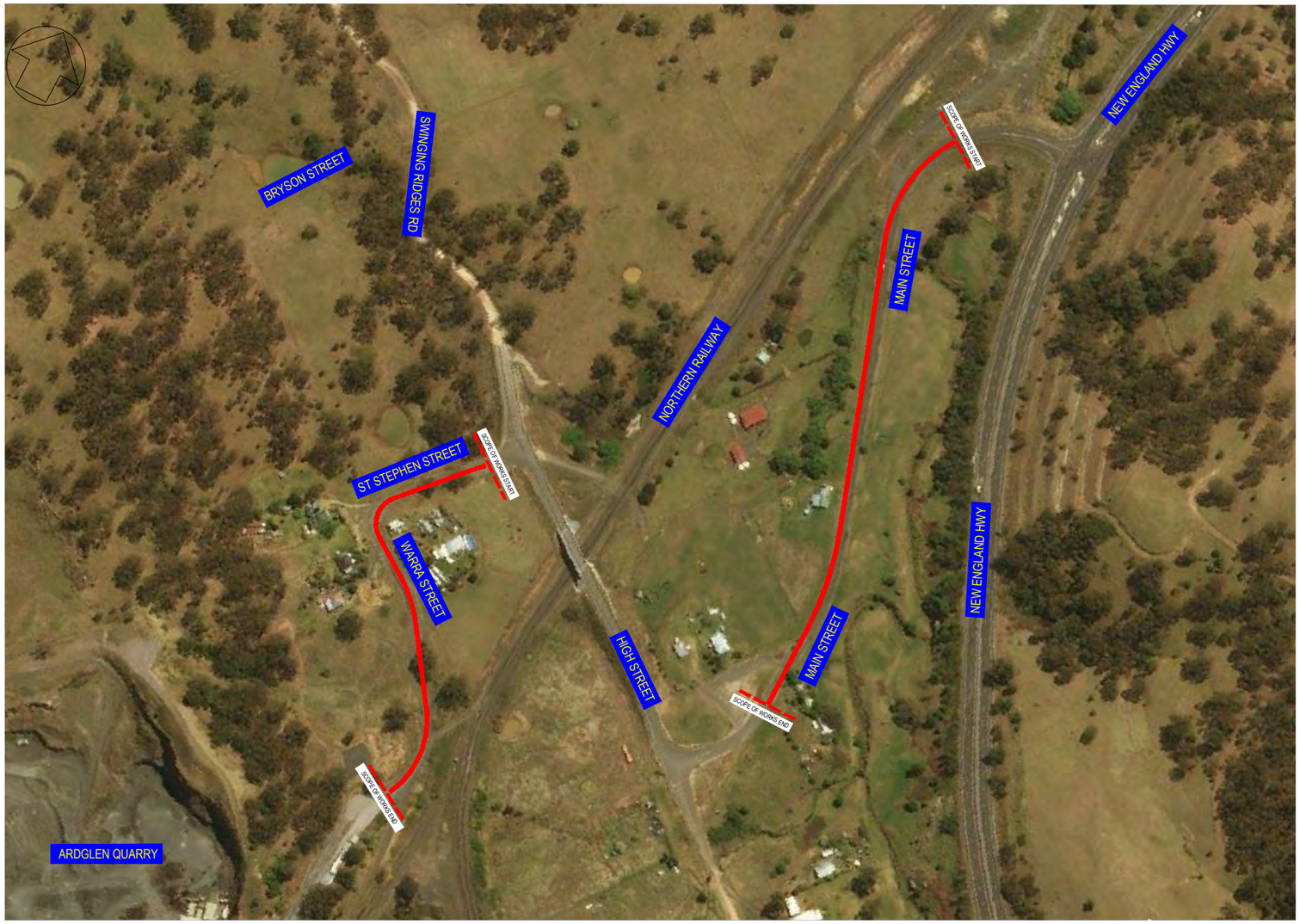
Liverpool Plains Shire Council
ABN 97 810 717 370

60 Station Street
(PO Box 152)
Quirindi NSW 2343

T (02) 6746 1755
council@liverpoolplains.nsw.gov.au
liverpoolplains.nsw.gov.au

ARDGLEN QUARRY
PROPOSED LOCAL ROAD UPGRADES

CONSTRUCTION DRAWINGS



CONSTRUCTIVE SOLUTIONS
"Approved for use."

"I certify that these plans meet the requirement of the brief."

Date 21/06/2022
Mick Bloem (MB)
Project Engineer

"I certify that these plans meet the Austroads and Roads and Maritime Services Standards where appropriate."

Date 21/06/2022
Project Designer
Tertius van Straten (TJ)

DRAWING INDEX

2021166-001	COVER SHEET
2021166-010	TYPICAL CROSS SECTIONS AND PAVEMENT DESIGN
2021166-011	CONSTRUCTION NOTES
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2021166-101	ST STEPHENS & WARRA STREET LAYOUT PLAN & PROFILE SHEET 2 OF 2
2021166-102	MAIN STREET LAYOUT PLAN & PROFILE SHEET 1 OF 3
2021166-103	MAIN STREET LAYOUT PLAN & PROFILE SHEET 2 OF 3
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2021166-105	SETTING OUT TABLES SHEET 1 OF 1
2021166-200	ST STEPHEN & WARRA ST DESIGN CROSS-SECTIONS SHEET 1 OF 3
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2021166-700	WARRA STREET DRAINAGE EXTENSION DRAWING SHEET 1 OF 1
2021166-900	TYPICAL ET-SS SAFETY BARRIER DETAILS
2021166-901	TYPICAL DRAINAGE DETAILS

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FOR CONSTRUCTION

REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
2	14-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
1	03-05-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
0	04-03-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
D	05-01-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
C	15-12-21	ISSUE FOR COUNCIL REVIEW	M. BLOEM
B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
A	7-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM

DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

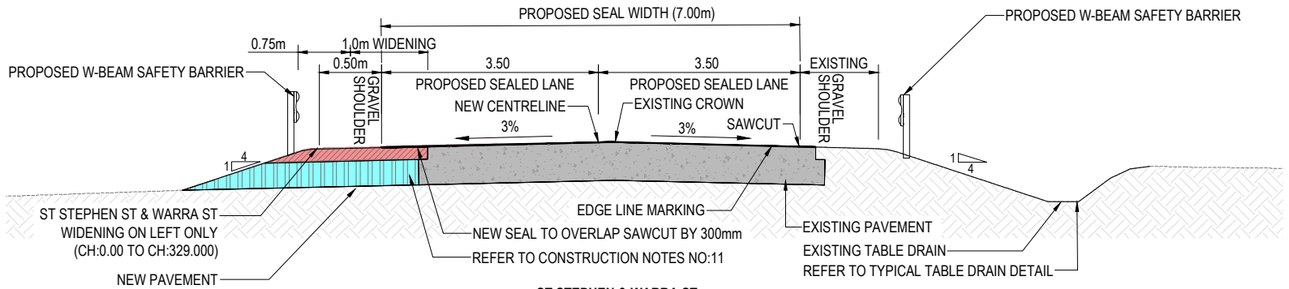
DRAWING TITLE: COVER SHEET

CLIENT: DARACON Group

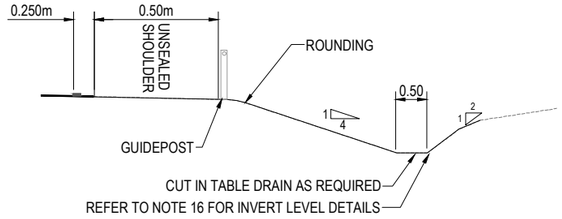
constructive solutions
providing total solutions

FOR CONSTRUCTION

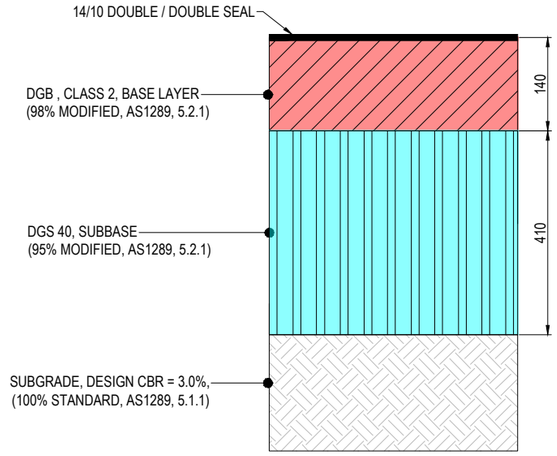
CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-001	3



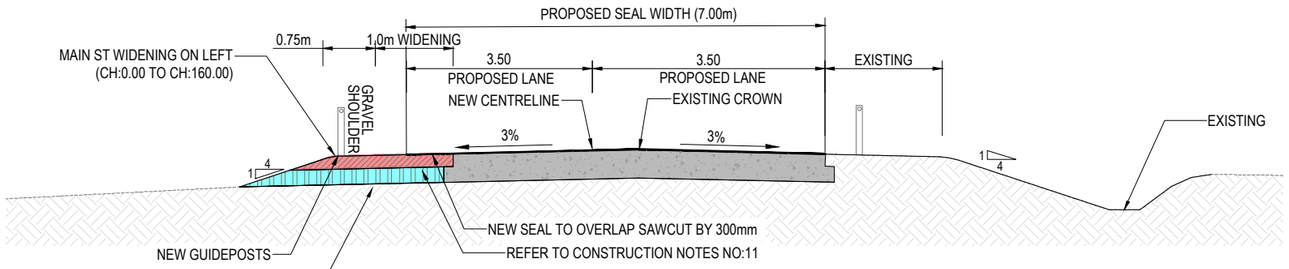
ST STEPHEN & WARRA ST
PROPOSED WIDENING LHS, CH:0.00 TO CH:329.895
1:50



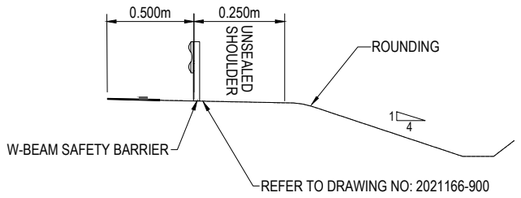
TYPICAL TABLE DRAIN DETAIL
N.T.S



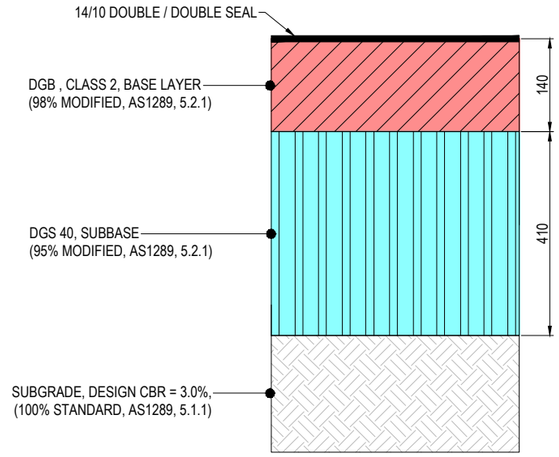
PAVEMENT DESIGN 1 (AS PER GEOTECH-REPORT)
ST STEPHEN & WARRA ST WIDENING



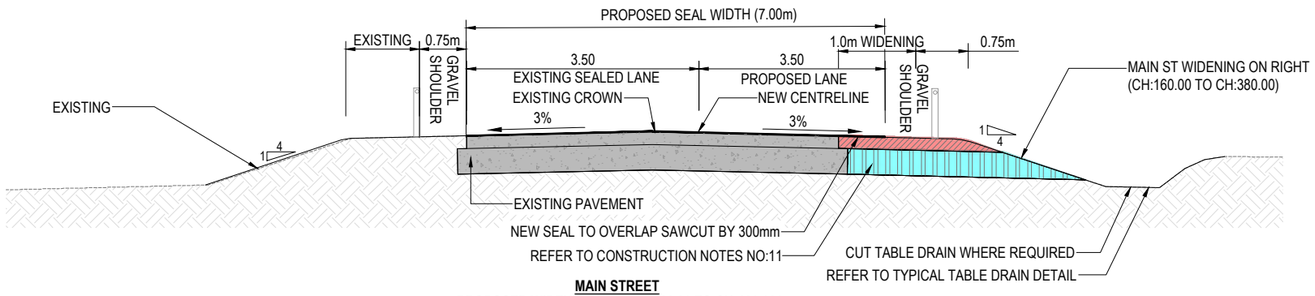
MAIN STREET
PROPOSED WIDENING LHS, CH:0.00 TO CH:329.895
1:50



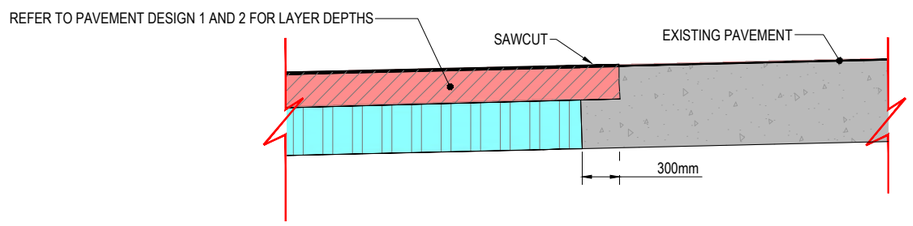
TYPICAL SAFETY BARRIER DETAIL
N.T.S



PAVEMENT DESIGN 2 (AS PER GEOTECH-REPORT)
MAIN ST WIDENING



MAIN STREET
PROPOSED WIDENING RHS, CH:280.00 TO CH:461.161
1:50



TYPICAL PAVEMENT JOINTS
N.T.S

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FOR CONSTRUCTION

REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
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DRAWN: T.J. VAN STRATEN
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PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: TYPICAL CROSS SECTIONS AND PAVEMENT DESIGN

CLIENT: DARACON Group

constructive solutions
providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	**REV**
2021166-010	3

CONSTRUCTION NOTES:

PAVEMENT NOTES - GENERAL

1. A BRIDGING LAYER SHOULD BE ALLOWED FOR BENEATH THE PAVEMENT WHERE ROAD PAVEMENT CROSSES ANY AREAS WHERE POOR, WET OR SATURATED SUBGRADE CONDITIONS ARE ENCOUNTERED. THE REQUIREMENT (IF ANY) FOR BRIDGING LAYERS IS LIKELY TO BE DEPENDENT ON THE PREVAILING WEATHER CONDITIONS AT THE TIME OF CONSTRUCTION.
2. IT IS RECOMMENDED THAT EACH CONSTRUCTION LENGTH BE BOXED OUT TO THE MINIMUM SUBGRADE LEVEL REQUIRED BY THE RELEVANT PAVEMENT THICKNESS DESIGN. PRIOR TO PAVEMENT CONSTRUCTION, THE EXPOSED SUBGRADE SHOULD BE ASSESSED BY THE GEOTECHNICAL AUTHORITY TO CONFIRM THE PAVEMENT THICKNESS REQUIREMENT FOR THAT SECTION.
3. A PRIME COAT SHOULD BE PLACED OVER THE BASE COURSE AND ALLOWED TO CURE PRIOR TO PLACEMENT OF THE 14/10 DOUBLE/DOUBLE SEAL IN ACCORDANCE WITH COUNCIL REQUIREMENTS.
4. AN ALLOWANCE FOR ADDITIONAL SUBGRADE REPLACEMENT SHOULD BE ANTICIPATED IN ANY AREAS WHERE POOR, WET OR SATURATED SUBGRADE CONDITIONS ARE ENCOUNTERED.
5. PRIOR TO PAVEMENT CONSTRUCTION, THE EXISTING TOTAL PAVEMENT THICKNESS AND/OR EXPOSED SUBGRADE SHOULD BE ASSESSED BY THE GEOTECHNICAL AUTHORITY TO CONFIRM THE PAVEMENT THICKNESS REQUIREMENT FOR THAT SECTION.
6. IF ROCK SUBGRADE MATERIALS ARE ENCOUNTERED, THE ROCK SHOULD BE RIPPED AND RE-COMPACTED TO BREAK-UP ANY PREFERENTIAL DRAINAGE PATHS AND PROVIDE A DENSE HOMOGENOUS SURFACE ON WHICH TO CONSTRUCT THE PAVEMENT.
7. PAVEMENT MATERIALS FOR SUB-BASE AND BASE COURSE SHALL COMPLY WITH THOSE AS SHOWN ON THE PAVEMENT PROFILE.
8. SELECT FILL ADOPTED WILL BE DEPENDENT ON SUBGRADE MOISTURE CONDITIONS.

PAVEMENT NOTES - CONSTRUCTION CONSIDERATIONS

1. A CLEAN, VERTICAL PERPENDICULAR SURFACE AT FULL DEPTH SHOULD BE CUT FOR BOTH TRANSVERSE AND LONGITUDINAL JOINTING TO REDUCE THE RISK OF PLATING AND HEAVING EFFECTS ON THE PAVEMENT
2. ENSURE JOINTS ARE NOT LOCATED IN IN WHEEL PATHS.
3. ENSURE JOINTS IN SUB-BASE / SELECT LAYERS ARE OFFSET TO JOINTS IN THE BASE LAYER.
4. RAMPING BETWEEN LAYERS, AND AT THE ENTRY AND EXIT POINTS TO THE PAVEMENT, MUST BE REMOVED AT ALL TIMES.
5. DURING CONSTRUCTION, ANY TEMPORARY ACCESS RAMPS TO PROPERTIES OR DRIVEWAYS MUST ALSO BE REMOVED.

PAVEMENT NOTES - EXCAVATION

1. THE SUITABILITY OF MATERIAL FOR RE-USE SHOULD BE ASSESSED AND CONFIRMED BY THE GEOTECHNICAL AUTHORITY AT THE TIME OF CONSTRUCTION.
2. IT IS ANTICIPATED THAT WEATHERED ROCK MATERIAL ENCOUNTERED COULD BE EXCAVATED BY CONVENTIONAL EXCAVATOR OR BACKHOE BUCKET AT LEAST TO THE DEPTHS INDICATED ON THE APPENDED BOREHOLE LOGS.
3. THERE IS POTENTIAL FOR GROUNDWATER TO EXIST AT OTHER LOCALISED AREAS OF THE SITE SUCH AS WITHIN THE TOPSOIL / SLOPEWASH PROFILE, FROM WATER PERCHED ABOVE THE CLAY / BEDROCK PROFILE, OR WITHIN EXISTING PAVEMENT GRAVELS. IT IS POSSIBLE THAT WATER INFLOW MAY BE ENCOUNTERED FROM SUCH LAYERS, PARTICULARLY IF EARTHWORKS ARE CARRIED OUT DURING OR FOLLOWING PERIODS OF WET WEATHER. IF ENCOUNTERED, IN MOST CASES SHALLOW GROUNDWATER IS GENERALLY EXPECTED TO BE MANAGEABLE BY DE-WATERING BY SUMP AND PUMP METHODS.
4. EXCAVATIONS SHOULD BE BATTERED AT 1V:2H OR FLATTER AND PROTECTED FROM EROSION.
5. TEMPORARY EXCAVATIONS SHOULD BE BATTERED AT 1V:1H OR FLATTER IN COHESIVE SOILS, OR 1V:1.5H OR FLATTER IN GRANULAR SOILS, AND PROTECTED FROM EROSION.
6. TEMPORARY EXCAVATIONS TO DEPTHS OF UP TO 1.2M IN COMPETENT COMPACT MATERIAL WITH SUFFICIENT COHESION, SUCH AS CLAY OF STIFF CONSISTENCY OR BETTER MAY BE BATTERED VERTICALLY, SUBJECT TO INSPECTION DURING EXCAVATION BY THE GEOTECHNICAL AUTHORITY.
7. CARE SHOULD BE TAKEN NOT TO DISTURB OR DESTABILISE EXISTING UNDERGROUND SERVICES OR STRUCTURES

PAVEMENT NOTES - SITE PREPARATION

1. FOLLOWING BULK EXCAVATION TO PROPOSED SUBGRADE LEVEL, ALL AREAS OF PROPOSED PAVEMENT CONSTRUCTION SHOULD BE STRIPPED TO REMOVE ALL EXISTING UNCONTROLLED FILL, VEGETATION, TOPSOIL, ROOT AFFECTED OR OTHER POTENTIALLY DELETERIOUS MATERIALS.
2. STRIPPING IS GENERALLY EXPECTED TO BE REQUIRED TO DEPTHS OF ABOUT 0.3M TO REMOVE TOPSOIL, SLOPEWASH AND UNCONTROLLED FILL (WHERE ENCOUNTERED).
3. ADDITIONAL STRIPPING MAY BE REQUIRED IN ANY AREAS WHERE POOR, WET OR SATURATED SUBGRADE CONDITIONS ARE ENCOUNTERED.
4. FOLLOWING STRIPPING, THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED (MINIMUM 10 TONNE STATIC ROLLER), TO IDENTIFY ANY WET OR EXCESSIVELY DEFLECTING MATERIAL. ANY SUCH AREAS SHOULD BE OVER EXCAVATED AND BACKFILLED WITH AN APPROVED SELECT MATERIAL.
5. THE MOISTURE CONTENT OF THE SUBGRADE MATERIALS AND THEREFORE THE NEED FOR MOISTURE CONDITIONING OR OVER-EXCAVATION AND REPLACEMENT, WILL BE LARGELY DEPENDENT ON PRE-EXISTING AND PREVAILING WEATHER CONDITIONS AT THE TIME OF CONSTRUCTION.
6. SUBGRADE PREPARATION SHOULD BE CARRIED OUT USING A TRACKED EXCAVATOR EQUIPPED WITH A SMOOTH SIDED ('GUMMY') BUCKET TO MINIMISE THE RISK OF OVER-DISTURBANCE OF SOILS.
7. PROTECT THE AREA AFTER SUBGRADE PREPARATION TO MAINTAIN MOISTURE CONTENT AS FAR AS PRACTICABLE. THE PLACEMENT OF SUBBASE GRAVEL WOULD NORMALLY PROVIDE ADEQUATE PROTECTION.
8. SITE PREPARATION SHOULD INCLUDE PROVISION OF DRAINAGE AND EROSION CONTROL AS REQUIRED, AS WELL AS SEDIMENTATION CONTROL MEASURES.
9. IT SHOULD BE ANTICIPATED THAT SOME MOISTURE CONDITIONING OF THE SUBGRADE / EXISTING PAVEMENT MATERIAL MAY BE NECESSARY PRIOR TO COMPACTION AND PLACEMENT OF PAVEMENT MATERIALS.
10. THE REQUIRED TIME PERIOD TO PREPARE THE SUBGRADE / EXISTING PAVEMENT SURFACE IS LIKELY TO BE DEPENDENT ON THE PREVAILING WEATHER CONDITIONS AT THE TIME OF CONSTRUCTION.
11. IF OVER WET SUBGRADES EXIST AT THE TIME OF CONSTRUCTION OR DELETERIOUS FILL MATERIALS ARE ENCOUNTERED AT SUBGRADE LEVEL, THESE MATERIALS SHOULD BE OVER-EXCAVATED AND BE REPLACED WITH A MINIMUM DEPTH OF 300MM OF WELL GRADED GRANULAR SELECT MATERIAL WITH CBR OF 15% OR GREATER, OR A 2% CEMENT STABILISED SUBBASE MATERIAL.
12. THE SELECTION OF SELECT MATERIAL WHERE REQUIRED WILL BE DEPENDENT ON MOISTURE CONDITION OF SUBGRADES AT THE TIME OF CONSTRUCTION.
13. THE REQUIREMENT FOR, AND EXTENT OF SUBGRADE REPLACEMENT / SELECT FILLING, SHOULD BE CONFIRMED BY THE GEOTECHNICAL AUTHORITY AT THE TIME OF CONSTRUCTION.

PAVEMENT NOTES - FILL PROCEDURE

1. APPROVED FILL BENEATH PAVEMENTS SHOULD BE COMPACTED IN LAYERS NOT EXCEEDING 300MM LOOSE THICKNESS TO THE COMPACTION REQUIREMENTS AS SHOWN ON THE PAVEMENT PROFILE.
2. THE TOP 300MM OF NATURAL SUBGRADE BELOW PAVEMENTS OR THE FINAL 300MM OF ROAD SUBGRADE FILL SHOULD BE COMPACTED TO PROVIDE A SUBGRADE THAT IS WITHIN THE MOISTURE RANGE OF 60% TO 90% OF OPTIMUM MOISTURE CONTENT (OMC).
3. PAVEMENT MATERIALS SHOULD BE COMPACTED IN LAYERS TO THE COMPACTION REQUIREMENTS AS SHOWN ON PAVEMENT PROFILE AND NOT MORE THAN 225MM AND NOT LESS THAN 75MM THICKNESS.

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FOR CONSTRUCTION

REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
2	14-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
1	03-05-22	ISSUED FOR COUNCIL APPROVAL	M. BLOEM
0	04-03-22	ISSUED FOR COUNCIL APPROVAL	M. BLOEM
D	05-01-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
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B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
A	7-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM

DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: CONSTRUCTION NOTES

CLIENT: DARACON Group

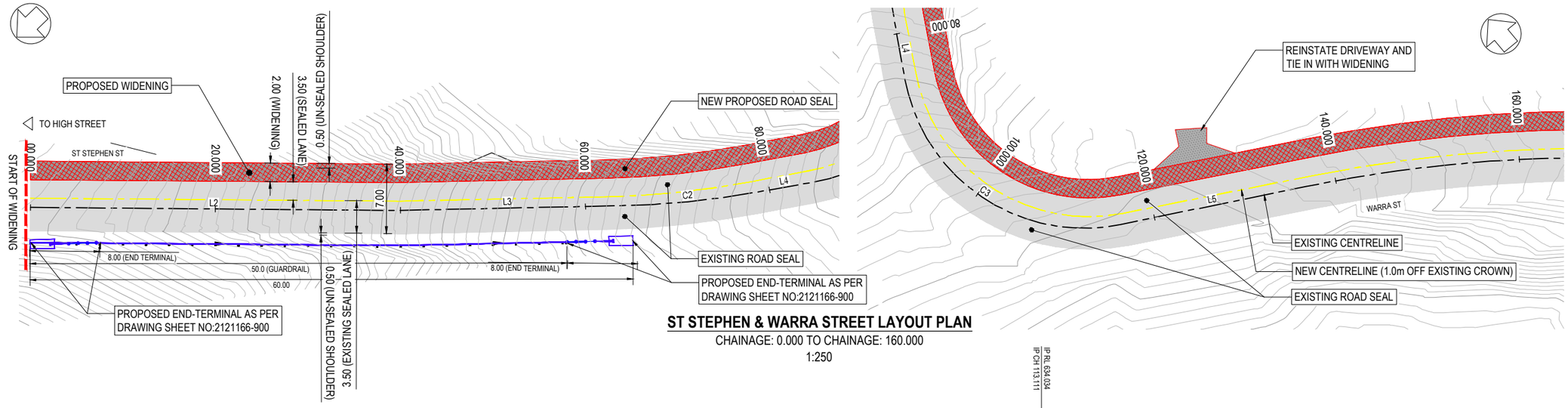
constructive solutions — providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-011	3

LEGEND

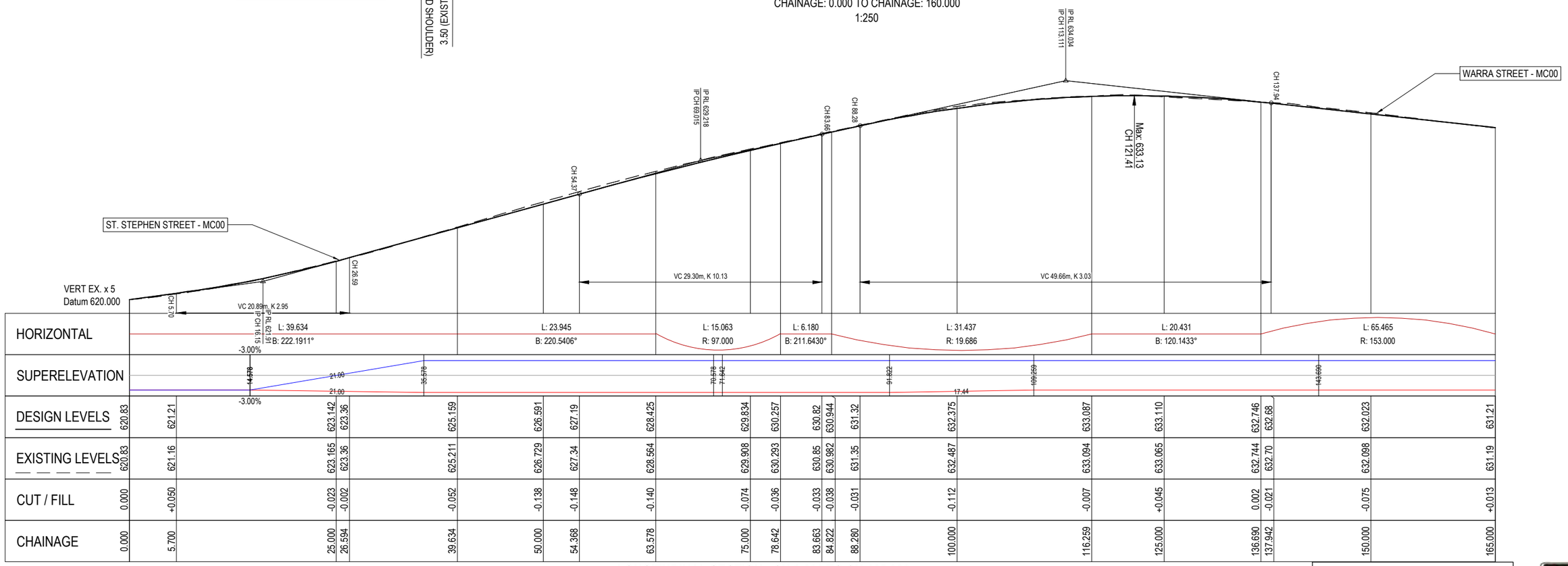
EXISTING ROAD BITUMEN SURFACE		DESIGN DRAINAGE		EXISTING STORMWATER LINE	SW
PROPOSED WIDENED		EXISTING ROAD SEAL EDGE		EXISTING SEWER LINE	S
REINSTATE PROPERTY ACCESS (DRIVEWAY)		BOUNDARIES		EXISTING FENCE	\
CENTRELINE		EXISTING TELECOMMUNICATION LINE	T	PROPOSED W-BEAM SAFETY BARRIER	
DESIGN BATTER		EXISTING POWER POLE			
EXISTING DRAINAGE	D	EXISTING ELECTRICITY LINE (OVERHEAD)	E		
		EXISTING WATER MAIN	W		
		EXISTING HOUSE SERVICE LINE	WS		



ST STEPHEN & WARRA STREET LAYOUT PLAN

CHAINAGE: 0.000 TO CHAINAGE: 160.000

1:250



LONGITUDINAL SECTION - CH 0.000 TO CH 165.000

1:250

0 15 30 Meters

FOR CONSTRUCTION

DIAL BEFORE YOU DIG www.1100.com.au

REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
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B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
A	7-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM

DRAWN	DESIGNED	CHECKED	APPROVED
T.J. VAN STRATEN	T.J. VAN STRATEN	M. BLOEM	M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: ST STEPHEN & WARRA STREET LAYOUT PLAN & PROFILE SHEET 1 OF 2

CLIENT: DARACON Group

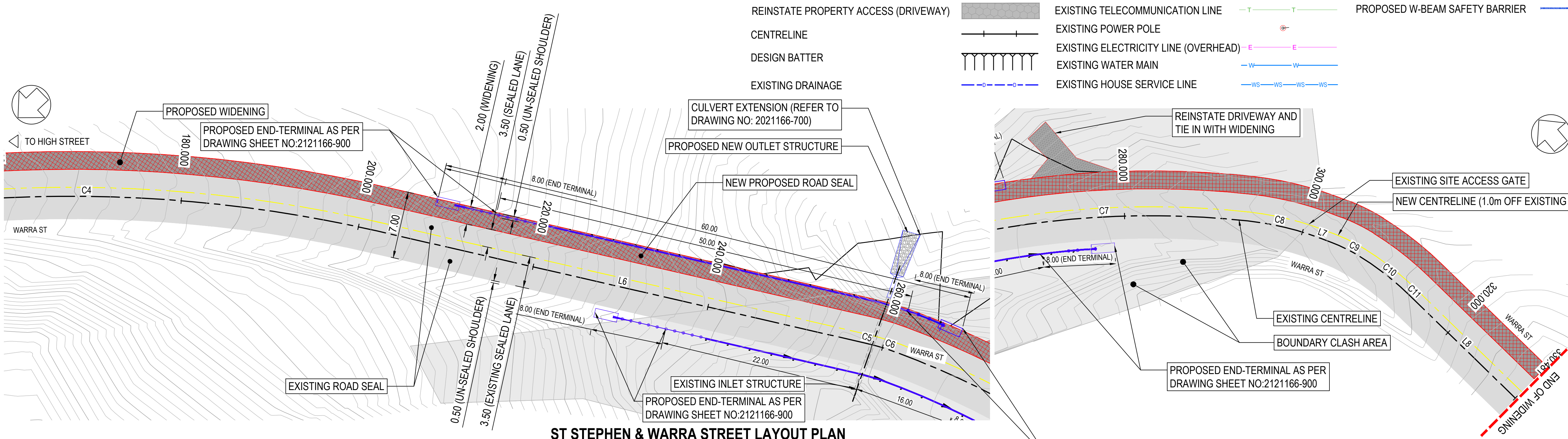
constructive solutions — providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	**REV**
2021166-100	3

LEGEND

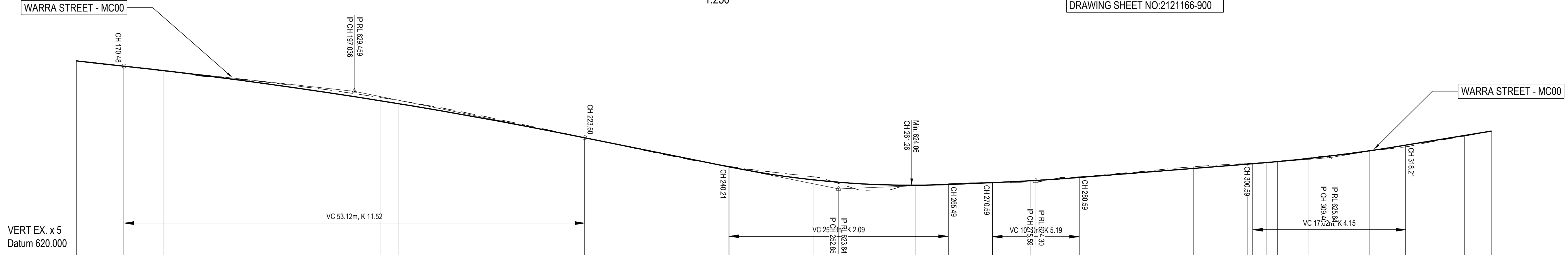
EXISTING ROAD BITUMEN SURFACE	DESIGN DRAINAGE	EXISTING STORMWATER LINE	
PROPOSED WIDENED	EXISTING ROAD SEAL EDGE	EXISTING SEWER LINE	
REINSTATE PROPERTY ACCESS (DRIVEWAY)	BOUNDARIES	EXISTING FENCE	
CENTRELINE	EXISTING TELECOMMUNICATION LINE	PROPOSED W-BEAM SAFETY BARRIER	
DESIGN BATTER	EXISTING POWER POLE		
EXISTING DRAINAGE	EXISTING ELECTRICITY LINE (OVERHEAD)		
	EXISTING WATER MAIN		
	EXISTING HOUSE SERVICE LINE		



ST STEPHEN & WARRA STREET LAYOUT PLAN

CHAINAGE: 160.000 TO CHAINAGE: 329.895

1:250



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EXISTING LEVELS	631.19	630.89	630.631	629.104	628.930	626.79	626.643	625.15	624.532	623.783	623.784	624.039	624.14	624.21	624.236	624.54	625.117	625.297	625.32	625.365	625.433	625.616	626.017	626.018	626.27	626.881	627.17	
CUT / FILL	+0.013	+0.016	+0.020	-0.185	-0.185	-0.005	+0.002	-0.032	-0.174	0.296	0.296	0.017	-0.037	-0.009	+0.073	-0.037	-0.097	-0.032	-0.030	-0.013	-0.021	-0.026	0.022	0.023	+0.094	+0.035	0.000	
CHAINAGE	165.000	170.476	175.000	200.000	202.154	223.595	225.000	240.208	250.000	258.060	258.063	261.752	265.486	270.585	275.000	280.585	293.769	300.000	300.585	302.127	303.454	306.967	314.062	314.064	318.209	325.000	328.067	329.895

HORIZONTAL: L: 65.465 R: 153.000; L: 55.906 B: 144.6587°; L: 32.017 R: 100.221; L: 8.358 R: 33.000; L: 7.094 R: 33.000; L: 16.417 B: 208.5327°

SUPERELEVATION

LONGITUDINAL SECTION - CH 165.000 TO CH 329.895

1:250

FOR CONSTRUCTION

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DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

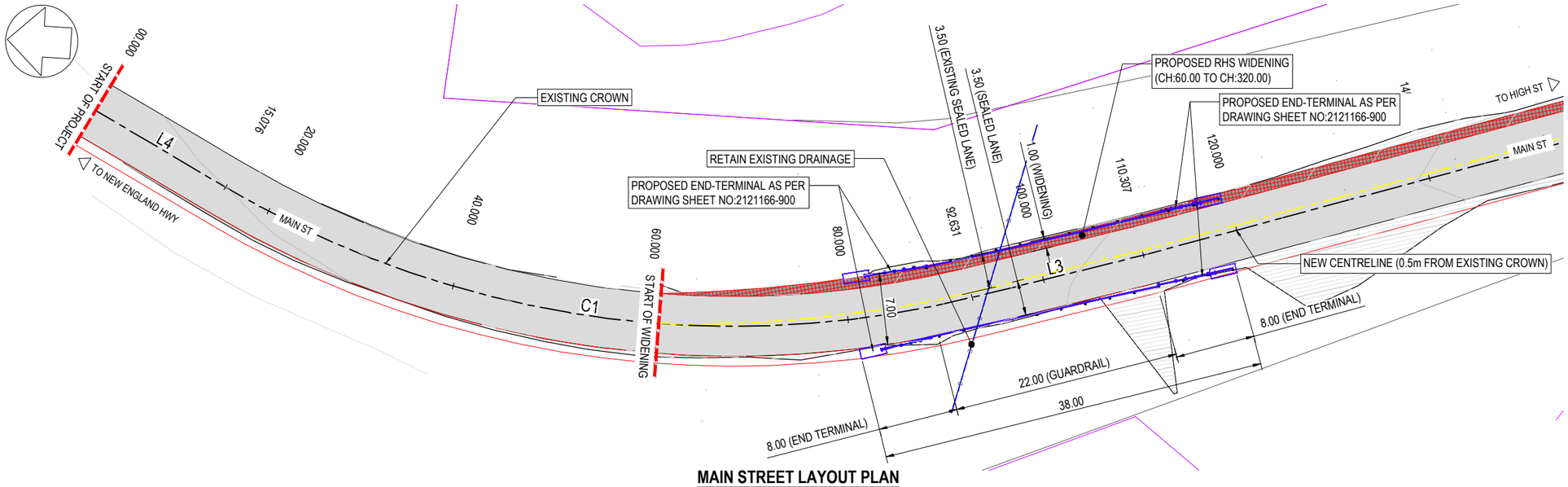
DRAWING TITLE: ST STEPHEN & WARRA STREET LAYOUT PLAN & PROFILE SHEET 2 OF 2

CLIENT: DARACON Group

constructive solutions — providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.: 2021166 | SIZE: A1
DRAWING NUMBER: 2021166-101 | REV: 3



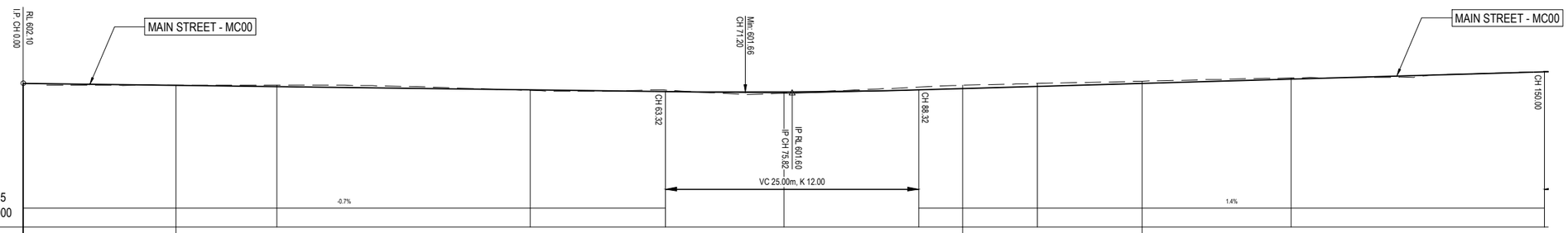
LEGEND

- EXISTING ROAD BITUMEN SURFACE
- PROPOSED WIDENED
- REINSTATE PROPERTY ACCESS (DRIVEWAY)
- CENTRELINE
- DESIGN BATTER
- EXISTING DRAINAGE
- DESIGN DRAINAGE
- EXISTING ROAD SEAL EDGE
- BOUNDARIES
- EXISTING TELECOMMUNICATION LINE
- EXISTING POWER POLE
- EXISTING ELECTRICITY LINE (OVERHEAD)
- EXISTING WATER MAIN
- EXISTING HOUSE SERVICE LINE
- EXISTING STORMWATER LINE
- EXISTING SEWER LINE
- EXISTING FENCE

MAIN STREET LAYOUT PLAN

CHAINAGE: 000.000 TO CHAINAGE: 150.000

1:500



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SUPERELEVATION		24.48 / 24.48	24.476	35.52 / 35.52		23.23 / 23.23	83.231		28.20 / 28.20		111.431	18.80 / 18.80	90.231	48.601 -2.00%
DESIGN LEVELS	602.10	602.001	601.936	601.772	601.68	601.665	601.78	601.842	601.947	602.094		602.304		602.661
EXISTING LEVELS	602.10	602.000	602.000	601.743	601.76	601.611	601.91	602.001	602.085	602.200		602.363		602.675
CUT / FILL	0.000	0.001	-0.064	+0.029	-0.080	+0.053	-0.126	-0.159	-0.137	-0.105		-0.058		-0.014
CHAINAGE	0.000	15.076	25.000	50.000	63.323	75.000	88.323	92.631	100.000	110.307		125.000		150.000

LONGITUDINAL SECTION - CH 000.000 TO CH 150.000

1:500

0 15 30 Meters

FOR CONSTRUCTION

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DESIGNED: T.J. VAN STRATEN
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APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: MAIN STREET LAYOUT PLAN & PROFILE SHEET 3 OF 3

CLIENT: DARACON Group

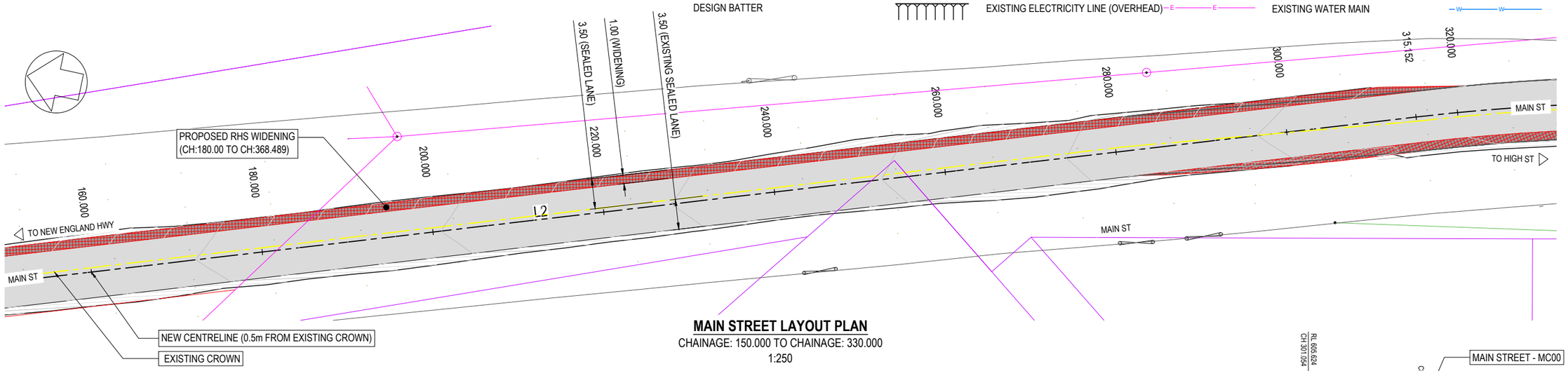
constructive solutions — providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-102	3

LEGEND

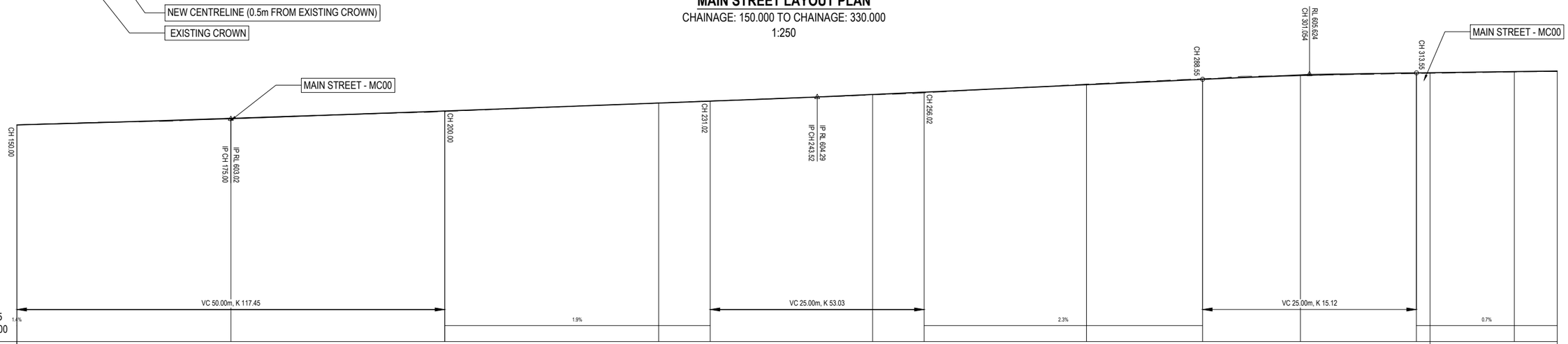
EXISTING ROAD BITUMEN SURFACE	DESIGN DRAINAGE
PROPOSED WIDENED	EXISTING ROAD SEAL EDGE
REINSTATE PROPERTY ACCESS (DRIVEWAY)	BOUNDARIES
CENTRELINE	EXISTING TELECOMMUNICATION LINE
DESIGN BATTER	EXISTING POWER POLE
	EXISTING ELECTRICITY LINE (OVERHEAD)
EXISTING STORMWATER LINE	
EXISTING SEWER LINE	
EXISTING FENCE	
PROPOSED W-BEAM SAFETY BARRIER	
EXISTING HOUSE SERVICE LINE	
EXISTING DRAINAGE	
EXISTING WATER MAIN	



MAIN STREET LAYOUT PLAN

CHAINAGE: 150.000 TO CHAINAGE: 330.000

1:250



DESIGN LEVELS	602.66	602.66	603.044	603.48	603.481	603.944	604.06	604.441	604.58	605.019	605.33	605.557	605.71	605.719	605.785	605.82
EXISTING LEVELS	602.67	602.67	603.053	603.45	603.450	603.944	604.06	604.425	604.54	605.050	605.37	605.558	605.67	605.685	605.765	605.78
CUT / FILL	-0.014	-0.014	-0.009	+0.031	+0.031	0.000	-0.008	+0.017	+0.036	-0.031	-0.034	-0.001	+0.037	0.034	+0.020	+0.034
CHAINAGE	150.000	150.000	175.000	200.000	200.000	225.000	231.021	250.000	256.021	275.000	288.554	300.000	313.554	315.152	325.000	330.000

0 15 30 Meters

LONGITUDINAL SECTION - CH 150.000 TO CH 330.000

1:250

FOR CONSTRUCTION

DIAL BEFORE YOU DIG www.1100.com.au

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DRAWN: T.J. VAN STRATEN

DESIGNED: T.J. VAN STRATEN

CHECKED: M. BLOEM

APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: MAIN STREET LAYOUT PLAN & PROFILE SHEET 2 OF 3

CLIENT: DARACON Group

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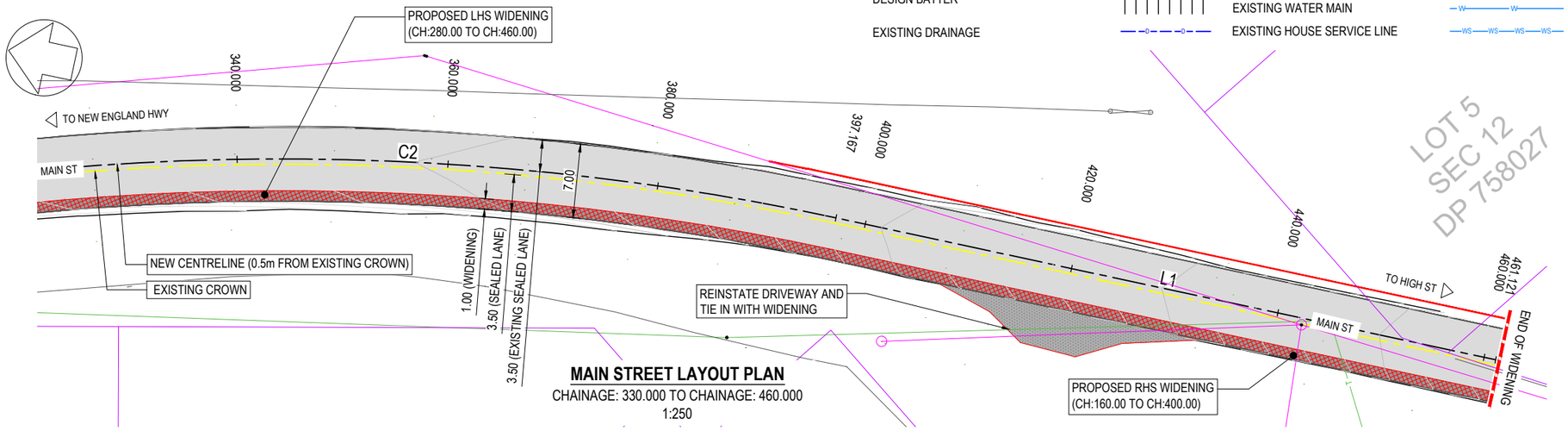
FOR CONSTRUCTION

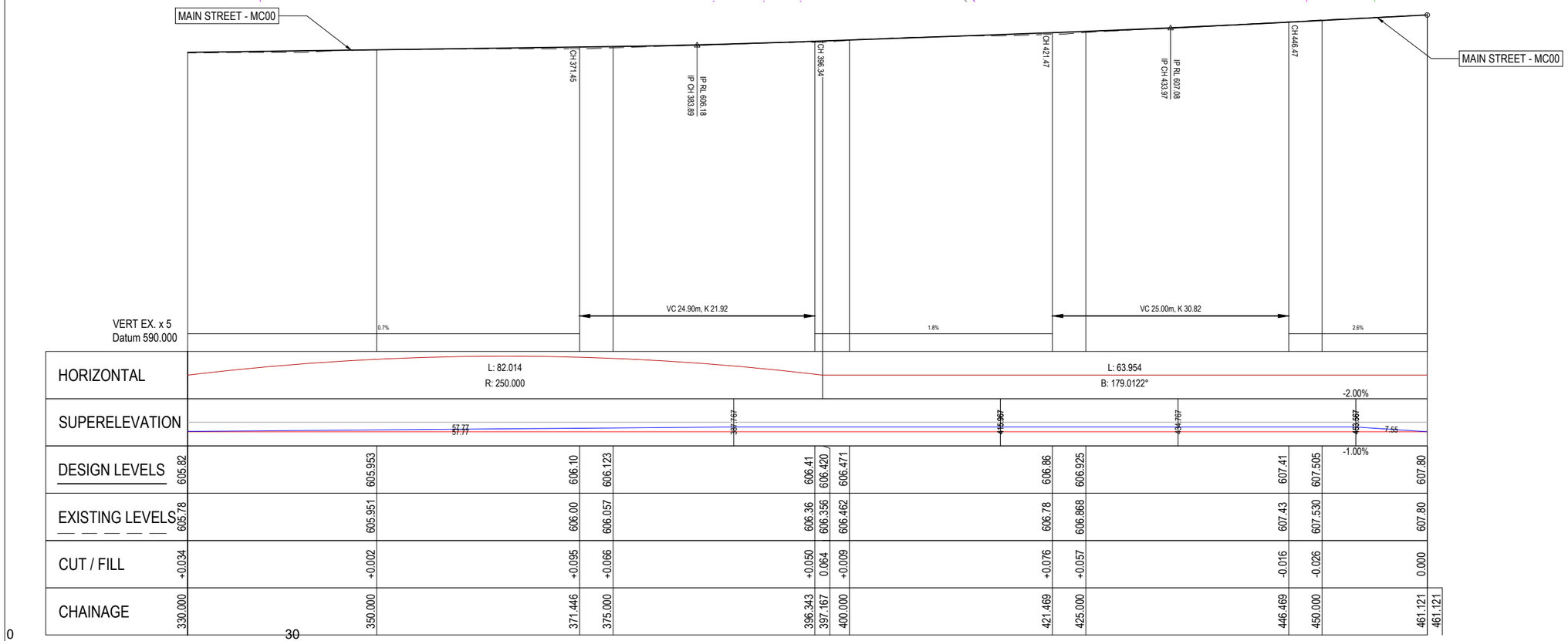
CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-103	3

LEGEND

EXISTING ROAD BITUMEN SURFACE	DESIGN DRAINAGE
PROPOSED WIDENED	EXISTING ROAD SEAL EDGE
REINSTATE PROPERTY ACCESS (DRIVEWAY)	BOUNDARIES
CENTRELINE	EXISTING TELECOMMUNICATION LINE
DESIGN BATTER	EXISTING POWER POLE
EXISTING DRAINAGE	EXISTING ELECTRICITY LINE (OVERHEAD)
	EXISTING WATER MAIN
	EXISTING HOUSE SERVICE LINE
	EXISTING STORMWATER LINE
	EXISTING SEWER LINE
	EXISTING FENCE
	PROPOSED W-BEAM SAFETY BARRIER



MAIN STREET LAYOUT PLAN
CHAINAGE: 330.000 TO CHAINAGE: 460.000
1:250



0 15 30 Meters

LONGITUDINAL SECTION - CH 330.000 TO CH 460.000
1:250

FOR CONSTRUCTION

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REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
2	14-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
1	03-05-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
0	04-03-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
D	05-01-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
C	15-12-21	ISSUE FOR COUNCIL REVIEW	M. BLOEM
B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
A	7-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM

DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: MAIN STREET LAYOUT PLAN & PROFILE SHEET 1 OF 3

CLIENT: DARACON Group

constructive solutions
providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	**REV**
2021166-104	3

SET OUT TABLE, MAIN ST

TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L1	BP EP	0.000 63.954	290046.658 290045.555	6486793.979 6486857.923	63.954		359.0122
C2	TP IP TP	63.954 105.333 145.968	290045.555 290044.842 290030.836	6486857.923 6486899.296 6486938.233	82.014	250.0	349° 36' 50.61"
L2	BP EP	145.968 350.813	290030.836 289961.501	6486938.233 6487130.987	204.845		340.2159
L3	BP EP	350.813 368.489	289961.501 289955.875	6487130.987 6487147.743	17.676		341.4424
C1	TP IP TP	368.489 409.335 446.045	289955.875 289942.875 289960.703	6487147.743 6487186.466 6487223.216	77.556	100.0	003° 39' 37.71"
L4	BP EP	446.045 461.121	289960.703 289967.283	6487223.216 6487236.780	15.076		025.8786

SET OUT TABLE, ST - STEPHEN & WARRA ST

TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L2	BP EP	0.000 39.634	289769.590 289742.971	6486859.315 6486829.950	39.634		222.1911
L3	BP EP	39.634 62.195	289742.971 289728.307	6486829.950 6486812.805	22.561		220.5406
C2	TP IP TP	62.195 70.242 78.251	289728.307 289723.077 289718.926	6486812.805 6486806.690 6486799.797	16.056	97.0	215° 47' 54.79"
L4	BP EP	78.251 84.547	289718.926 289715.678	6486799.797 6486794.404	6.296		211.0565
C3	TP IP TP	84.547 104.739 116.154	289715.678 289705.261 289722.658	6486794.404 6486777.106 6486766.855	31.607	20.0	165° 46' 58.11"
L5	BP EP	116.154 137.074	289722.658 289740.681	6486766.855 6486756.234	20.920		120.5092
C4	TP IP TP	137.074 169.804 201.562	289740.681 289768.880 289787.812	6486756.234 6486739.618 6486712.920	64.488	153.0	132° 35' 02.06"
L6	BP EP	201.562 257.475	289787.812 289820.155	6486712.920 6486667.310	55.913		144.6587
C5	TP IP TP	257.475 257.476 257.477	289820.155 289820.156 289820.156	6486667.310 6486667.309 6486667.308	0.003	42.6	144° 39' 37.23"
C6	TP IP TP	257.477 259.325 261.167	289820.156 289821.225 289822.086	6486667.308 6486665.801 6486664.167	3.690	28.0	148° 26' 13.39"
C7	TP IP TP	261.167 277.313 293.184	289822.086 289829.613 289832.274	6486664.167 6486649.883 6486633.958	32.017	100.2	161° 21' 50.11"
C8	TP IP TP	293.184 297.385 301.542	289832.274 289832.966 289832.598	6486633.958 6486629.813 6486625.628	8.358	33.0	177° 46' 18.71"
L7	BP EP	301.542 302.869	289832.598 289832.482	6486625.628 6486624.306	1.327		185.0279
C9	TP IP TP	302.869 304.631 306.382	289832.482 289832.327 289831.835	6486624.306 6486622.551 6486620.858	3.514	18.0	190° 37' 11.90"
C10	TP IP TP	306.382 309.943 313.476	289831.835 289830.841 289829.140	6486620.858 6486617.439 6486614.311	7.094	33.0	202° 22' 14.14"
C11	TP IP TP	313.476 313.478 313.479	289829.140 289829.140 289829.139	6486614.311 6486614.310 6486614.309	0.002	38.5	208° 31' 51.43"
L8	BP EP	313.479 329.895	289829.139 289821.298	6486614.309 6486599.886	16.417		208.5327

0 15 30 Meters

FOR CONSTRUCTION

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DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

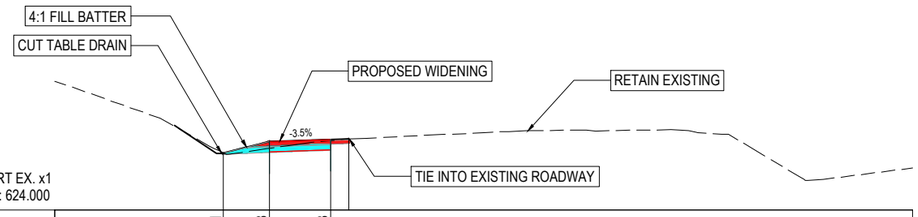
DRAWING TITLE: ROAD WIDENING SETTING OUT TABLES

CLIENT: DARACON Group

constructive solutions providing total solutions

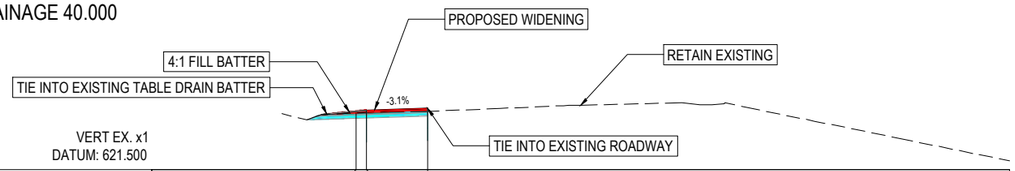
FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	**REV**
2021166-105	3



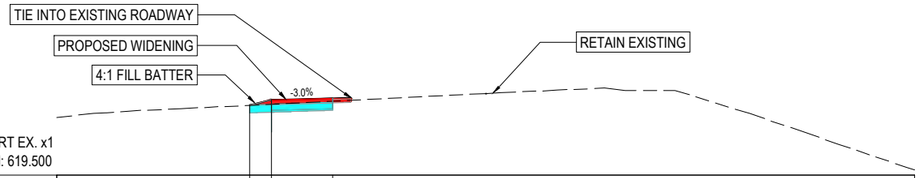
PROPOSED LEVELS	624.931	625.118	625.153
EXISTING LEVELS	624.931	624.598	624.633
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.248	3.500	2.500

CHAINAGE 40.000



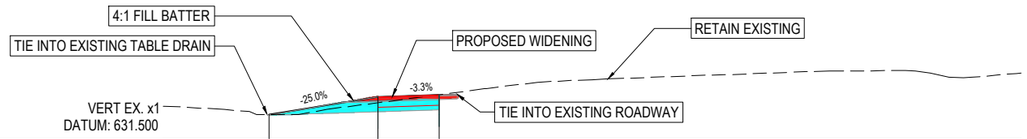
PROPOSED LEVELS	622.424	622.466	622.497
EXISTING LEVELS	622.424	621.946	621.977
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.666	3.500	2.500

CHAINAGE 20.000



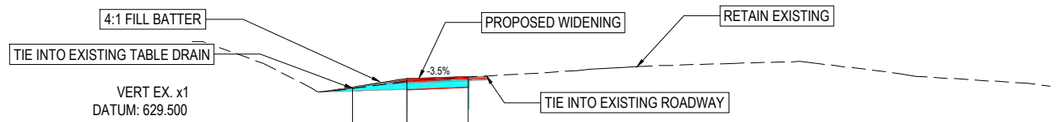
PROPOSED LEVELS	620.636	620.724	620.754
EXISTING LEVELS	620.636	620.204	620.234
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.850	3.500	2.500

CHAINAGE 00.000



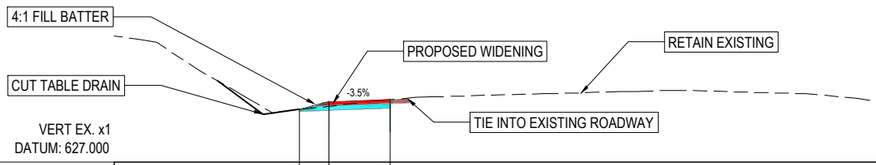
PROPOSED LEVELS	631.915	632.359	632.392
EXISTING LEVELS	631.915	631.839	631.872
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	5.275	3.500	2.500

CHAINAGE 100.000



PROPOSED LEVELS	630.093	630.315	630.350
EXISTING LEVELS	630.093	629.795	629.830
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.386	3.500	2.500

CHAINAGE 80.000



PROPOSED LEVELS	627.854	627.974	628.009
EXISTING LEVELS	627.854	627.454	627.489
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.978	3.500	2.500

CHAINAGE 60.000

0 15 30 Meters

DESIGN CROSS - SECTIONS - CH 000.000 TO CH 100.000

1:500

FOR CONSTRUCTION

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DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: ST STEPHEN & WARRA ST DESIGN CROSS-SECTIONS SHEET 1 OF 3

CLIENT: DARACON Group

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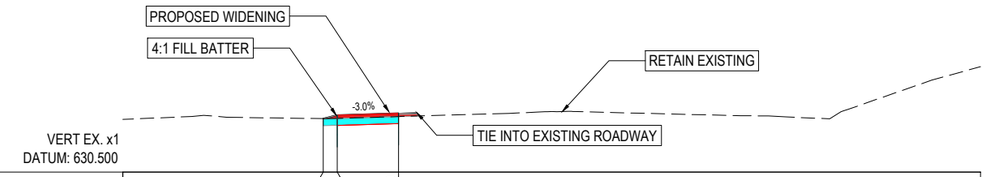
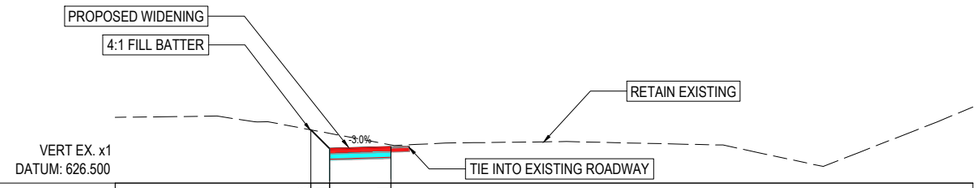
FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-200	3



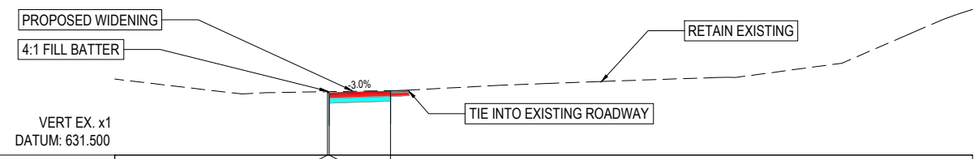
PROPOSED LEVELS	631.372	631.429	631.459
EXISTING LEVELS	631.372	630.909	630.939
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.729	3.500	2.500

CHAINAGE 160.000



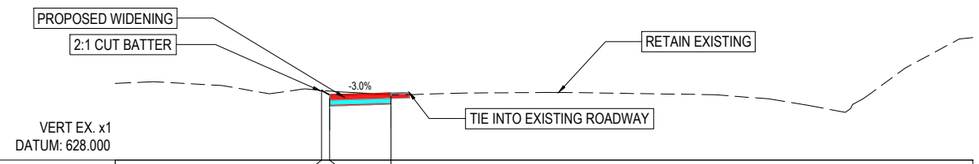
PROPOSED LEVELS	627.368	627.061	627.091
EXISTING LEVELS	627.368	626.541	626.571
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.807	3.500	2.500

CHAINAGE 220.000



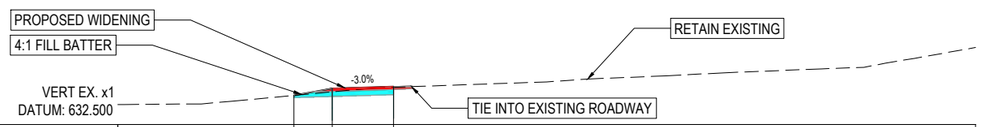
PROPOSED LEVELS	632.535	632.507	632.537
EXISTING LEVELS	632.535	631.987	632.017
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.529	3.500	2.500

CHAINAGE 140.000



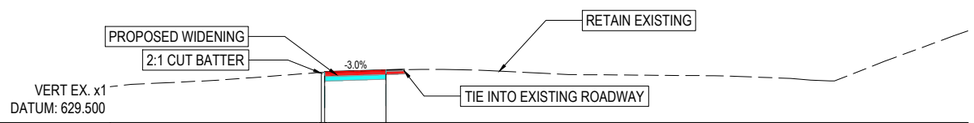
PROPOSED LEVELS	629.139	629.008	629.038
EXISTING LEVELS	629.139	628.488	628.518
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.631	3.500	2.500

CHAINAGE 200.000



PROPOSED LEVELS	632.932	633.088	633.118
EXISTING LEVELS	632.932	632.568	632.598
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.126	3.500	2.500

CHAINAGE 120.000



PROPOSED LEVELS	630.314	630.261	630.291
EXISTING LEVELS	630.314	629.741	629.771
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.554	3.500	2.500

CHAINAGE 180.000

DESIGN CROSS - SECTIONS - CH 120.000 TO CH 220.000

1:500

0 15 30 Meters

FOR CONSTRUCTION

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REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
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CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

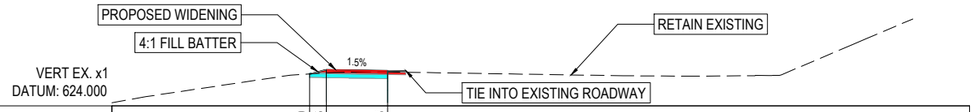
DRAWING TITLE: ST STEPHEN & WARRA ST DESIGN CROSS-SECTIONS SHEET 2 OF 3

CLIENT: DARACON Group

constructive solutions — providing total solutions

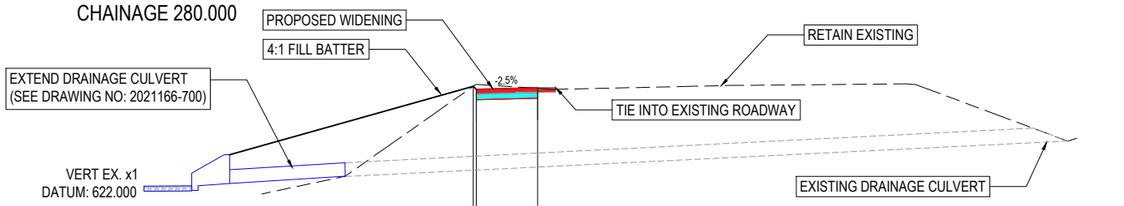
FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-201	3



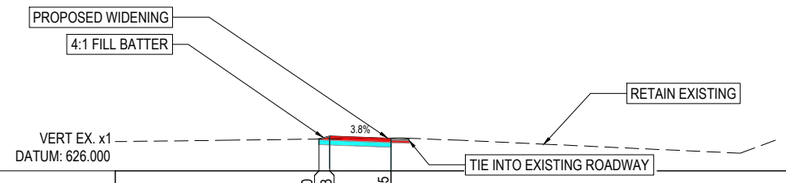
PROPOSED LEVELS	624.519	624.588	624.573
EXISTING LEVELS	624.519	624.068	624.053
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.772	3.500	2.500

CHAINAGE 280.000



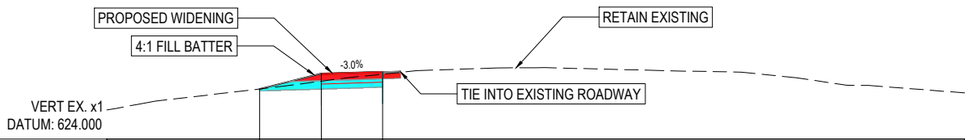
PROPOSED LEVELS	623.969	623.918	623.943
EXISTING LEVELS	623.969	623.398	623.423
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.551	3.500	2.500

CHAINAGE 260.000



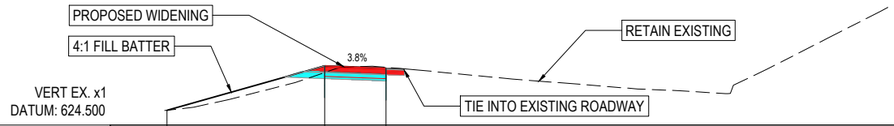
PROPOSED LEVELS	626.520	626.563	626.525
EXISTING LEVELS	626.520	626.043	626.005
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.675	3.500	2.500

CHAINAGE 320.000



PROPOSED LEVELS	624.816	625.068	625.098
EXISTING LEVELS	624.816	624.548	624.578
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.508	3.500	2.500

CHAINAGE 240.000



PROPOSED LEVELS	624.821	625.465	625.427
EXISTING LEVELS	624.821	624.945	624.907
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	6.074	3.500	2.500

CHAINAGE 300.000

0 15 30 Meters

DESIGN CROSS - SECTIONS - CH 240.000 TO CH 320.000

1:500

FOR CONSTRUCTION

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3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
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DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

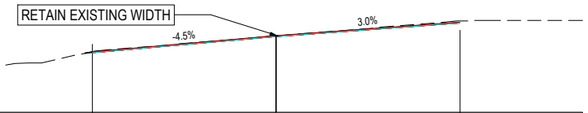
DRAWING TITLE: ST STEPHEN & WARRA ST DESIGN CROSS-SECTIONS SHEET 3 OF 3

CLIENT: DARACON Group

constructive solutions providing total solutions

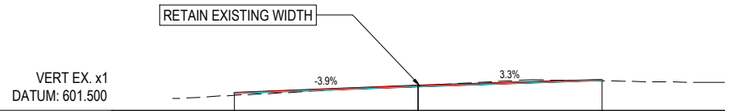
FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-202	3



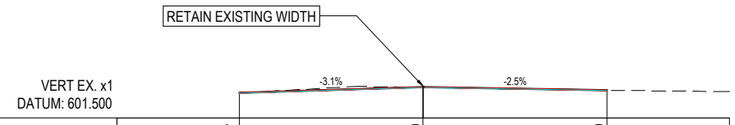
PROPOSED LEVELS	601.608	601.743	601.833
EXISTING LEVELS	601.598	601.73	601.823
PROPOSED PAVEMENT DEPTH	+0.000	0.000	+0.000
OFFSETS	3.000	0.000	3.000

CHAINAGE 60.000



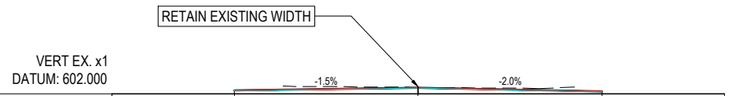
PROPOSED LEVELS	601.788	601.906	602.005
EXISTING LEVELS	601.778	601.90	601.995
PROPOSED PAVEMENT DEPTH	+0.000	0.000	+0.000
OFFSETS	3.000	0.000	3.000

CHAINAGE 40.000



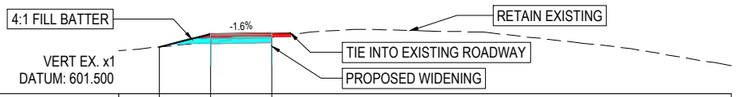
PROPOSED LEVELS	601.917	602.010	602.079
EXISTING LEVELS	601.907	602.00	602.069
PROPOSED PAVEMENT DEPTH	+0.000	0.000	+0.000
OFFSETS	3.000	0.000	3.000

CHAINAGE 20.000



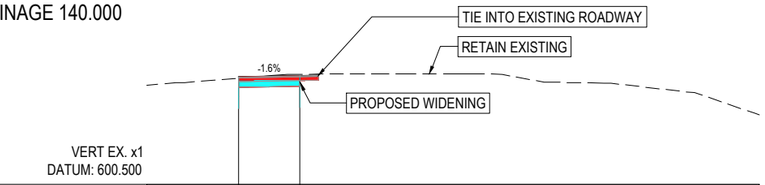
PROPOSED LEVELS	602.055	602.100	602.040
EXISTING LEVELS	602.045	602.090	602.030
PROPOSED PAVEMENT DEPTH	+0.000	+0.000	+0.000
OFFSETS	3.000	0.000	3.000

CHAINAGE 00.000



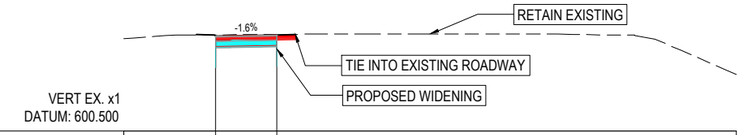
PROPOSED LEVELS	602.259	602.470	602.485
EXISTING LEVELS	602.259	601.950	601.965
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.343	3.500	2.500

CHAINAGE 140.000



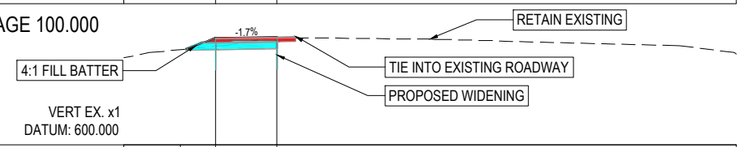
PROPOSED LEVELS	602.258	602.276
EXISTING LEVELS	601.738	601.756
PROPOSED PAVEMENT DEPTH	+0.520	+0.520
OFFSETS	3.500	2.500

CHAINAGE 120.000



PROPOSED LEVELS	602.049	602.065
EXISTING LEVELS	601.529	601.545
PROPOSED PAVEMENT DEPTH	+0.520	+0.520
OFFSETS	3.500	2.500

CHAINAGE 100.000



PROPOSED LEVELS	601.547	601.682	601.699
EXISTING LEVELS	601.547	601.162	601.179
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.308	3.500	2.500

CHAINAGE 80.000

0 15 30 Meters

DESIGN CROSS - SECTIONS - CH 0.000 TO CH 140.000

1:500

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REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
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B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
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DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

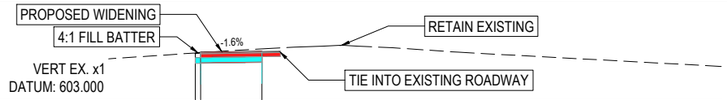
DRAWING TITLE: MAIN STREET DESIGN CROSS-SECTIONS - SHEET 1 OF 3

CLIENT: DARACON Group

constructive solutions — providing total solutions

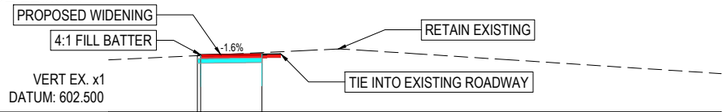
FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-203	3



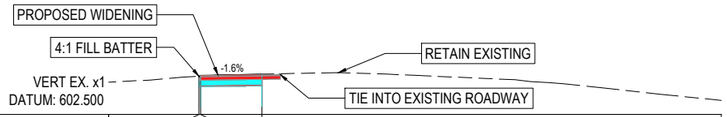
PROPOSED LEVELS	603.781	603.795	603.810
EXISTING LEVELS	603.781	603.275	603.290
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.587	3.500	2.500

CHAINAGE 220.000



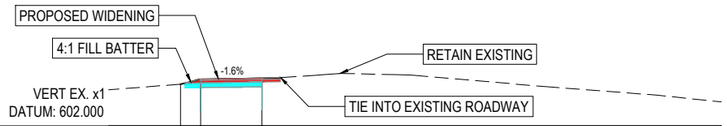
PROPOSED LEVELS	603.418	603.431	603.446
EXISTING LEVELS	603.418	602.911	602.926
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.552	3.500	2.500

CHAINAGE 200.000



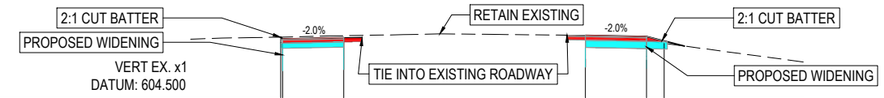
PROPOSED LEVELS	603.122	603.094	603.109
EXISTING LEVELS	603.122	602.574	602.589
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.529	3.500	2.500

CHAINAGE 180.000



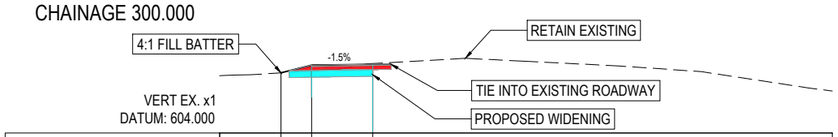
PROPOSED LEVELS	602.679	602.761	602.776
EXISTING LEVELS	602.679	602.241	602.256
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.828	3.500	2.500

CHAINAGE 160.000



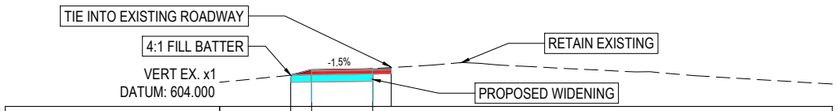
PROPOSED LEVELS	605.514	605.484	605.504	605.504	605.484	605.514
EXISTING LEVELS	605.514	604.964	604.984	604.984	604.964	605.514
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520	+0.520	+0.520	0.000
OFFSETS	3.530	3.500	2.500	2.500	3.500	3.530

CHAINAGE 300.000



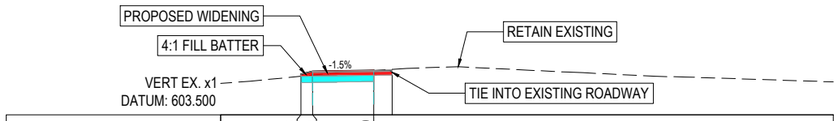
PROPOSED LEVELS	604.980	605.105	605.121
EXISTING LEVELS	604.980	604.585	604.601
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.998	3.500	2.500

CHAINAGE 280.000



PROPOSED LEVELS	604.470	604.595	604.610
EXISTING LEVELS	604.470	604.075	604.090
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	4.005	3.500	2.500

CHAINAGE 260.000



PROPOSED LEVELS	604.128	604.175	604.190
EXISTING LEVELS	604.128	603.655	603.670
PROPOSED PAVEMENT DEPTH	0.000	+0.520	+0.520
OFFSETS	3.689	3.500	2.500

CHAINAGE 240.000

0 15 30 Meters

DESIGN CROSS - SECTIONS - CH 160.000 TO CH 300.000

1:500

FOR CONSTRUCTION

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REV	DATE	REVISION DETAILS	APPROVED
3	21-06-22	ISSUED FOR CONSTRUCTION	M. BLOEM
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DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: MAIN STREET DESIGN CROSS-SECTIONS - SHEET 2 OF 3

CLIENT: DARACON Group

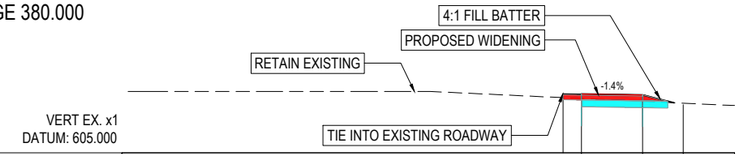
constructive solutions — providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	**REV**
2021166-204	3

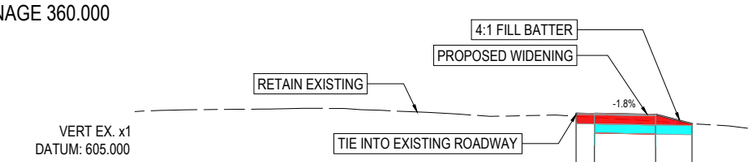
PROPOSED LEVELS	606.093	606.082	605.966	
EXISTING LEVELS	605.573	605.562	605.966	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	3.964	

CHAINAGE 380.000



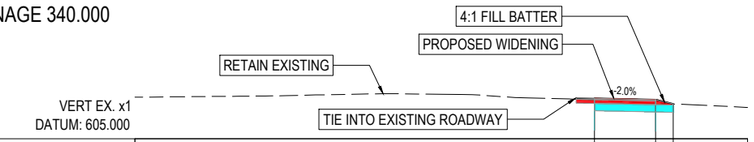
PROPOSED LEVELS	605.958	605.943	605.785	
EXISTING LEVELS	605.438	605.423	605.785	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	4.162	

CHAINAGE 360.000



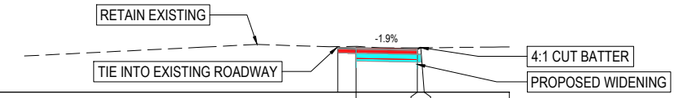
PROPOSED LEVELS	605.817	605.800	605.651	
EXISTING LEVELS	605.297	605.280	605.651	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	4.094	

CHAINAGE 340.000



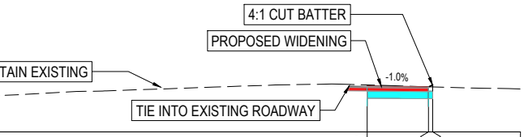
PROPOSED LEVELS	605.658	605.638	605.566	
EXISTING LEVELS	605.138	605.118	605.566	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	3.786	

CHAINAGE 320.000



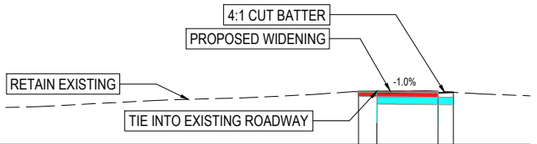
PROPOSED LEVELS	607.722	607.703	607.758	
EXISTING LEVELS	607.202	607.183	607.758	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	3.611	

CHAINAGE 460.000



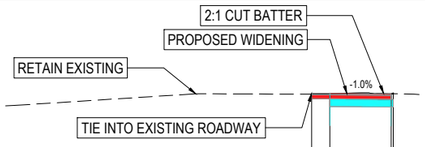
PROPOSED LEVELS	607.242	607.232	607.266	
EXISTING LEVELS	606.722	606.712	607.266	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	3.569	

CHAINAGE 440.000



PROPOSED LEVELS	606.737	606.727	606.851	
EXISTING LEVELS	606.217	606.207	606.851	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	3.749	

CHAINAGE 420.000



PROPOSED LEVELS	606.427	606.417	606.434	
EXISTING LEVELS	605.907	605.897	606.434	
PROPOSED PAVEMENT DEPTH	+0.520	+0.520	0.000	
OFFSETS	2.500	3.500	3.534	

CHAINAGE 400.000

0 15 30 Meters

DESIGN CROSS - SECTIONS - CH 320.000 TO CH 460.000

1:500

FOR CONSTRUCTION

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0	04-03-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
D	05-01-22	ISSUE FOR COUNCIL APPROVAL	M. BLOEM
C	15-12-21	ISSUE FOR COUNCIL REVIEW	M. BLOEM
B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
A	7-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM

DRAWN: T.J. VAN STRATEN
DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
APPROVED: M. BLOEM

PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

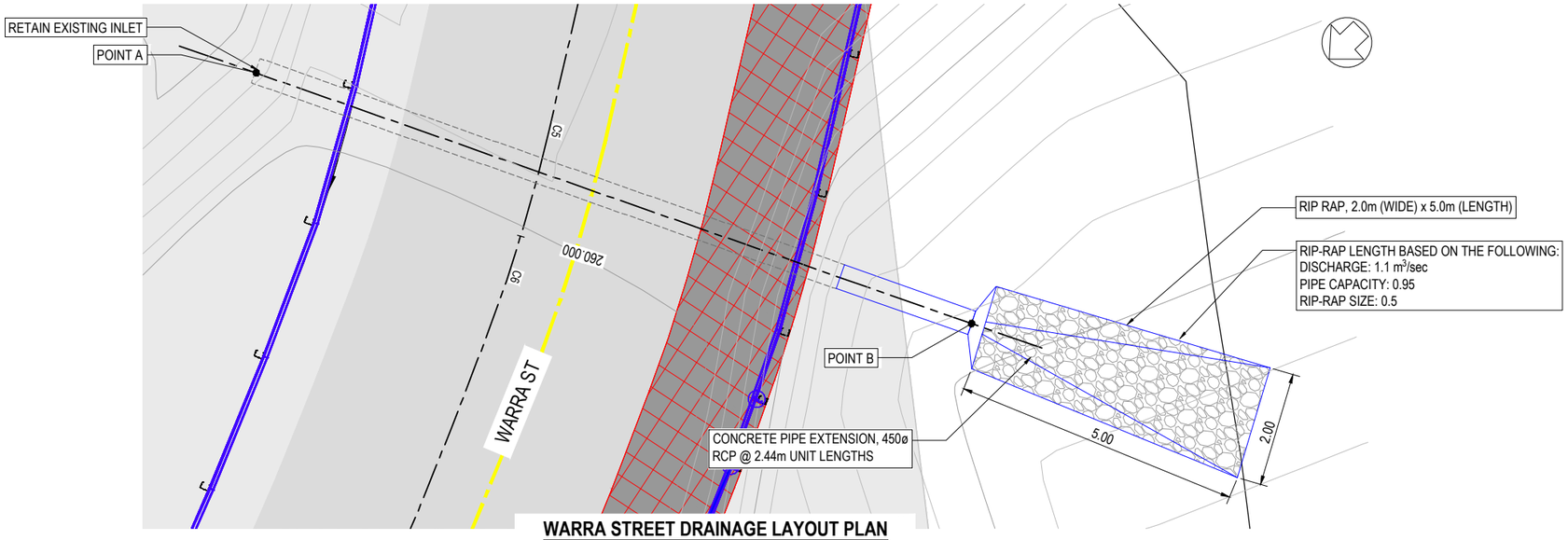
DRAWING TITLE: MAIN STREET DESIGN CROSS-SECTIONS - SHEET 3 OF 3

CLIENT: DARACON Group

constructive solutions — providing total solutions

FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-205	3



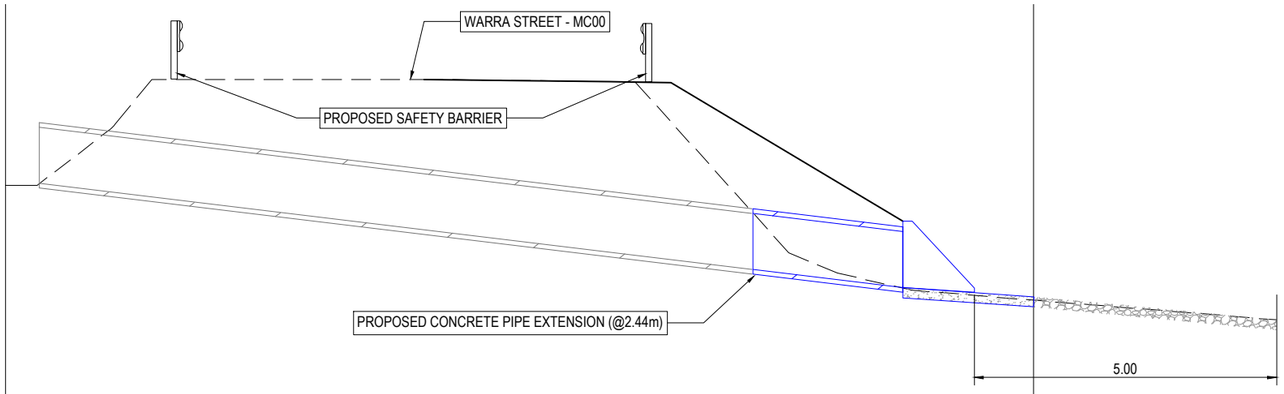
WARRA STREET DRAINAGE LAYOUT PLAN

CHAINAGE: 255.000

1:50

LEGEND

- EXISTING ROAD BITUMEN SURFACE
- PROPOSED WIDENED
- REINSTATE PROPERTY ACCESS (DRIVEWAY)
- CENTRELINE
- DESIGN BATTER
- EXISTING DRAINAGE
- DESIGN DRAINAGE
- EXISTING ROAD SEAL EDGE
- BOUNDARIES
- EXISTING TELECOMMUNICATION LINE
- EXISTING POWER POLE
- EXISTING ELECTRICITY LINE (OVERHEAD)
- EXISTING WATER MAIN
- EXISTING HOUSE SERVICE LINE
- EXISTING STORMWATER LINE
- EXISTING SEWER LINE
- EXISTING FENCE



VERT EXAG 1:2
Datum 621.000

GRADE %		6.000%		
PIPE DETAILS (CL to CL LENGTHS)		450 NB RCRRJ CLASS 3 EXISTING	450 NB RCRRJ CLASS 3 EXTENSION LENGTH: 2.440	PROPOSED OUTLET
DESIGN LEVEL AT MH CL	622.695	622.998	622.852	622.778
INVERT LEVEL	622.245	621.539	621.393	622.721
COVER (TOP OF PIPE)		-1.121	-1.009	-0.057
OFFSETS	0.000	11.760	14.200	15.670

CONCRETE PIPE CULVERT LONGITUDINAL SECTION - CH 255.000

1:50

WARRA ST DRAINAGE CONCRETE PIPE CULVERT EXTENSION SCHEDULE

CULVERT No.	APPROX. CHAINAGE	SIZE (mm)	PIPE CLASS	LENGTH (m)	SLOPE (%)	CULVERT SIDE	SETOUT POINT	NORTHING	EASTING	INVERT LEVEL	SCOUR PROTECTION
01	255.000	450ø	CLASS 3	2.44	6.000%	EXISTING INLET	A	6486664.021	289816.145	622.245	RIP-RAP AT OUTLET - AS SHOWN ON PLAN
						OUTLET	B	6486670.565	289827.611	621.393	

0 15 30 Meters

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PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

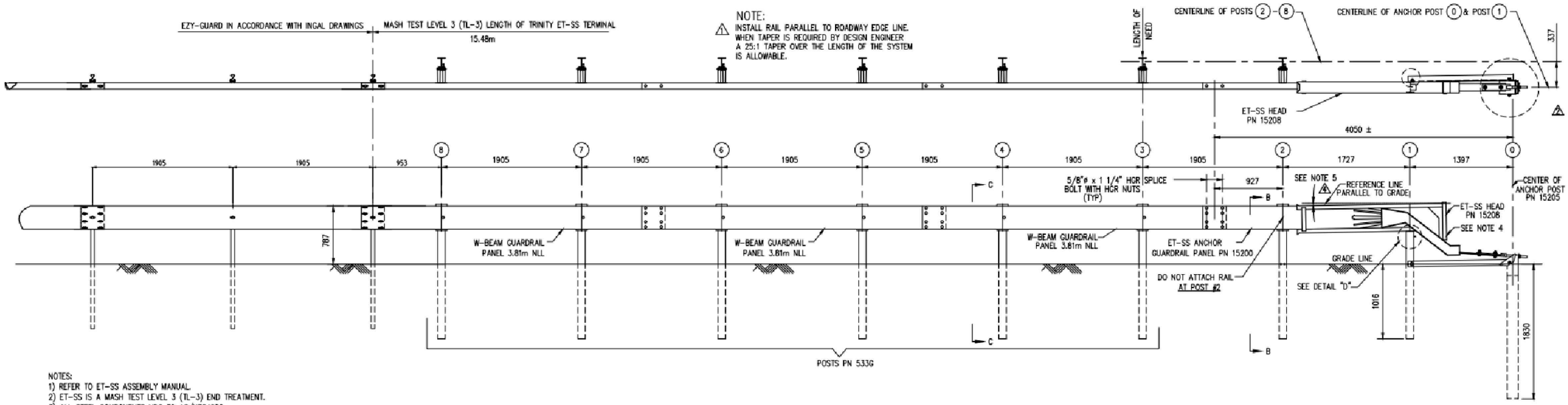
DRAWING TITLE: WARRA STREET DRAINAGE EXTENSION DRAWING SHEET 1 OF 1

CLIENT: DARACON Group

constructive solutions — providing total solutions

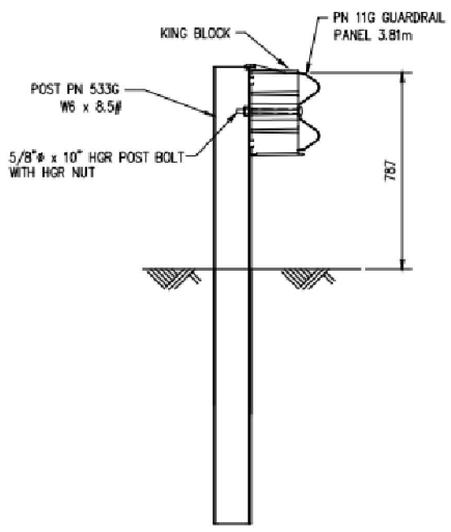
FOR CONSTRUCTION

CSPL PROJECT No.	SIZE
2021166	A1
DRAWING NUMBER	REV
2021166-700	3

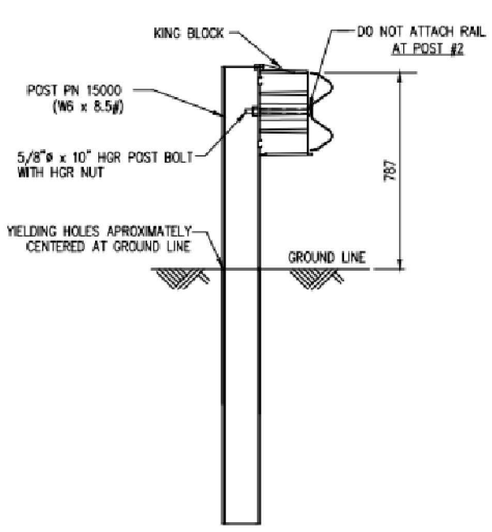


NOTES:
1) REFER TO ET-SS ASSEMBLY MANUAL.
2) ET-SS IS A MASH TEST LEVEL 3 (TL-3) END TREATMENT.
3) ALL STEEL COMPONENTS HDG TO AS/NZS4680.
4) DELINEATION OF TERMINAL TO BE IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS
5) IT IS ACCEPTABLE TO INSTALL THE ET-SS HEAD PARALLEL TO THE GRADE LINE OR WITH AN UPWARD TILT. SEE ET-SS ASSEMBLY MANUAL FOR SPECIFIC DETAILS.

ST STEPHEN & WARRA ST ET-SS SAFETY BARRIER
TYPICAL DETAILS
N.T.S



SECTION "C-C"
(POSTS #3 -#8)



SECTION "B-B"
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ST STEPHEN & WARRA ST ET-SS SAFETY BARRIER
TYPICAL SECTIONS
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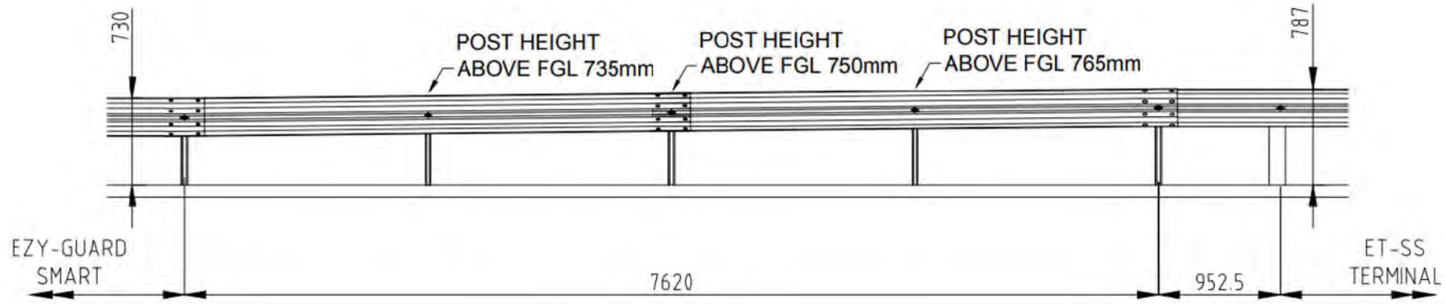

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TYPICAL DETAILS
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C	15-12-21	ISSUE FOR COUNCIL REVIEW	M. BLOEM
B	9-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM
A	7-12-21	ISSUE FOR INTERNAL REVIEW	M. BLOEM

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DESIGNED: T.J. VAN STRATEN
CHECKED: M. BLOEM
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PROJECT: ARDGLEN QUARRY - PROPOSED LOCAL ROAD UPGRADES

DRAWING TITLE: TYPICAL ET-SS SAFETY BARRIER DETAILS

CLIENT: DARACON Group

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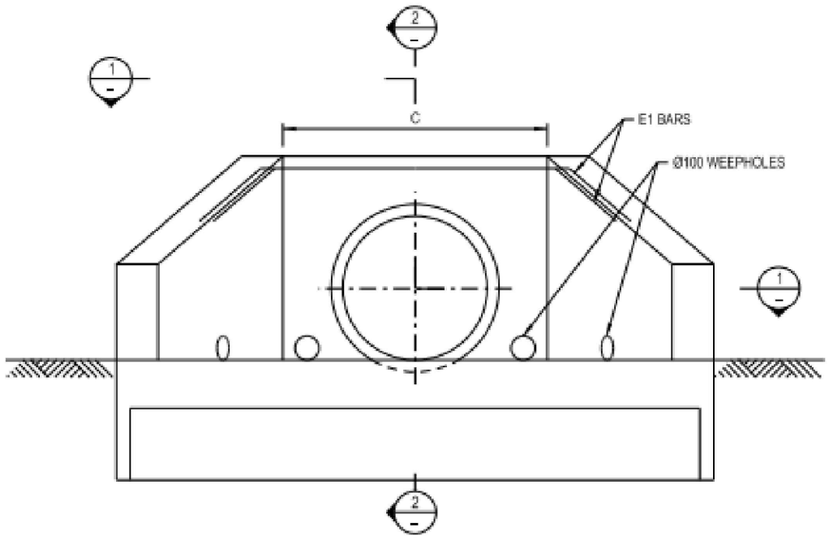
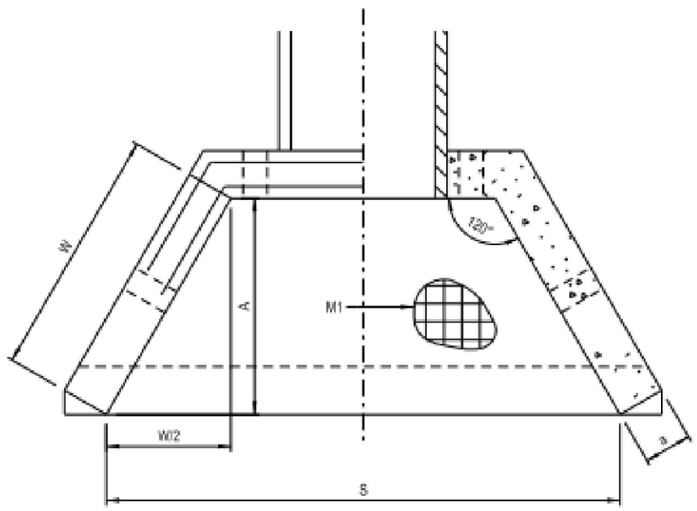
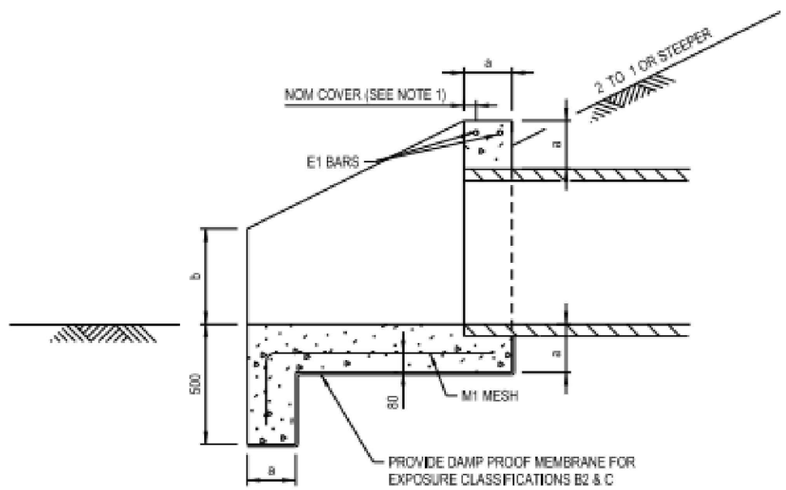


ELEVATION

DIMENSIONS	D NOMINAL PIPE DIAMETER		(mm)	300	375	450	525	600	750	900
	A APRON DEPTH		(mm)	270	415	580	735	900	1 210	1 540
	C HEADWALL LENGTH		(mm)	770	850	940	1 020	1 100	1 270	1 450
	S APRON WIDTH		(mm)	1 080	1 330	1 620	1 870	2 140	2 670	3 230
	W WINGWALL LENGTH		(mm)	310	480	680	850	1 040	1 400	1 780
	a		(mm)	150	150	150	150	150	150	150
	b		(mm)	300	300	300	300	400	400	400
QUANTITIES IN 2 HEADWALLS	E1 BAR Ø12 mm	L1	(mm)	885	965	1 055	1 135	1 215	1 385	1 565
		L2	(mm)	200	200	200	200	600	600	600
		No. REQ	(mm)	4	4	4	4	4	4	4
		LENGTH	(mm)	5 140	5 460	5 820	6 140	9 660	10 340	11 060
	M1 MESH	MARK		SL81	SL81	SL81	SL81	SL81	SL81	SL81
		L1	(mm)	1 260	1 510	1 800	2 050	2 320	2 850	3 410
		L2	(mm)	610	755	930	1 075	1 240	1 550	1 880
		L3	(mm)	175	260	360	445	540	720	910
		No. REQ		2	2	2	2	2	2	2
	STEEL REINFORCEMENT		(kg)	16.1	21.3	28.5	35.4	46.7	65.9	89.9
	CONCRETE N25 (SEE NOTE 1)		(m³)	0.53	0.71	0.94	1.18	1.49	2.12	2.89



SECTION 1
NOT TO SCALE



SECTION 2
NOT TO SCALE

NOTES

1. CONCRETE STRENGTH GRADES SHOWN ARE FOR EXPOSURE CLASSIFICATION A2. REFER TO RMS SPECIFICATION B80 AND AS3600-2009, FOR CONCRETE STRENGTH GRADE, COVER TO REINFORCEMENT AND FOR OTHER EXPOSURE CLASSIFICATIONS.
2. WEEPHOLES ARE TO BE PROVIDED AT 1800 CENTRES (MAXIMUM) AT OUTLET ONLY.
3. ALL STEEL BARS TO BE GRADE 400Y TO AS4671-2001.
4. MESH: LAPS SHALL BE MADE SO THAT THE TWO OUTERMOST WIRES OF ONE FABRIC OVERLAP THE TWO OUTERMOST WIRES OF THE SHEET BEING LAPPED.

REFERENCED DOCUMENTS:

AS4671-2001 STEEL REINFORCING MATERIALS
AS3600-2009 CONCRETE STRUCTURES
SPECIFICATION R11 - STORMWATER DRAINAGE
SPECIFICATION B80 - CONCRETE WORK FOR BRIDGES

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DRAWING NUMBER	REV
2021166-901	3

8.5 Appendix E – Consultation with Crown Lands

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Attention: Anna Cronin

Department of Planning and Environment
Crown Land
Noel Park House
55-157 Marius Street
Tamworth

12th May 2022

To Anna,

RE: Buttai Gravel, Ardglen quarry – Traffic and Transport Access Route

Further to our recent conversation regarding the presence (or otherwise) of Crown Land along the quarry access route from the New England Highway to the quarry site and in accordance with Schedule 2 Condition 14A of the Approval (excerpt shown below), it's a requirement for us to demonstrate that we've made reasonable efforts to assist the transfer of Crown roads to Liverpool Plains Shire Council (LPSC) prior to undertaking any works in the extension area.

Use of Crown Roads

14A. The Applicant must make reasonable efforts to assist in the transfer of any Crown roads forming part of the quarry access route to Council, prior to undertaking any works in the Extension Area.

Therefore, in order for us to satisfy the condition listed above, it'd be greatly appreciated if you could please advise if there is anything further we can do to assist this process, or whether no further action is required as the transfer may already have occurred?

Additionally, as discussed at the Community Consultative Committee meeting earlier this week, we continue to liaise with LPSC regarding the selective widening of the access road with the draft civil design currently with LPSC for review and approval.

Should you have any further queries, please don't hesitate to contact the undersigned.

Yours sincerely

Luke Robinson
Systems Manager – Construction Materials
Buttai Gravel Pty Ltd (Daracon Quarries)
0417 481 785

APPENDIX 4 Site Water Management Plan

umwelt
Environmental & Social Consultants

DARACON Group

SITE WATER MANAGEMENT PLAN

Ardglen Quarry

REV 4

May 2023

SITE WATER MANAGEMENT PLAN

Ardglen Quarry

REV 4

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Daracon

Project Director:	Luke Bettridge
Project Manager:	Luke Bettridge
Technical Director:	Chris Bonomini
Report No.	R01
Date:	May 2023

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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
FINAL	Chris Bonomini	20 January 2022	Chris Bonomini	20 January 2022
Rev 2	Chris Bonomini	27 June 2022	Chris Bonomini	27 June 2022
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Rev 4	Chris Bonomini	XX May 2023	Chris Bonomini	XX May 2023

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1.0 Introduction

1.1 Background

Ardglen Quarry (the Quarry) is located on Lot 218 DP 751028, Lot 1 DP 1001734, Lot 187 DP 751028, Lot 39 DP 751028 and Lot 49 DP 751028, adjacent to the small rural community of Ardglen. Ardglen is approximately 5 kilometres (km) northwest of Murrurundi and 60 km southwest of Tamworth (refer to **Figure 1.1**). The Quarry is owned and operated by Buttai Gravel Pty Ltd (trading as Daracon Quarries).

NSW Railways owned and operated the Quarry for over 100 years prior to the purchase by Daracon. In 2008 Daracon was granted approval under Part 3A of the Environmental Planning & Assessment Act 1979, to extend quarrying activities into the adjacent lot west of the existing operation, Lot 218 DP 751028. In December 2010 Daracon was granted approval for a modification to the Consent (Mod 1) and most recently in March 2021 approval was granted for a modification to the Consent (Mod 2).

The Consent permits:

- the extraction and processing of up to 500,000 (tpa)of material
- transport of a combined total 500,000 tonnes/year of quarrying products from the site by road and/or rail by either:
    - transport of 250,000 (tpa)of quarrying products from the site by rail
    - transport of 500,000 (tpa) of quarrying products from the site by road.
- Installation of noise management measures including barriers/bunds
- Modify the sediment basin, in pit sump and water treatment measures
- import of up to 80,000 tonnes/year for blending with quarried materials.

Figure 1.1 Locality

1.2 Purpose and Scope

The purpose of this Site Water Management Plan (SWMP) is to describe the water management strategies, procedures, controls and monitoring programs to be implemented at the Quarry for the management of surface water and groundwater potential impacts.

This SWMP addresses the relevant requirements of the Consent (06_0264) and Environment Protection Licence (EPL) 1115. The Consent conditions and environmental management commitments relevant to this plan are provided in **Section 1.4**. EPL conditions relevant to this plan are also provided in **Section 1.4**.

In addition to meeting the specific performance measures and criteria in the Consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation under the Consent.

1.3 Plan Implementation

Prior to DPE approval of this plan, existing management strategies, plans or programs approved prior to the approval of MOD 2 will continue to be implemented.

1.3.1 Responsibilities

Environmental management at the Quarry is the responsibility of all employees with the Quarry Manager having overall responsibility for environmental management of the operations. Roles and responsibilities for implementation of this SWMP for key personnel at the Quarry are outlined in **Table 1.1**.

Table 1.1 Roles and Responsibilities

Role	Responsibility
Daracon Divisional Manager – Construction Materials	Provide sufficient resources for the implementation of this plan.
Daracon Quarries Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Coordinate the implementation of water management measures and strategies in accordance with this plan. • Ensure all monitoring is undertaken in accordance with the requirements of this plan. • Ensure that the mine has sufficient water for all stages of the development, and if necessary, adjust the operations to match available water supply. • Ensure the mine is managed within the capacity of the mine water management system. • Be aware of the environmental legislative requirements associated with the mine and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs.

Role	Responsibility
Environmental Officer / Systems Manager	• Coordinate the review of this plan in accordance with the requirements of the Consent. • Coordinate the water monitoring program described in this plan. • Evaluate and report monitoring results as required by the Consent and Environment Protection Licence (EPL). • Coordinate water related incident investigations and reporting as required by legislation. • Initiate investigations of complaints as received from the public or government agency. • Provide primary contact for complaints and supply follow-up information to any complainant. • Prepare a report to government agencies or neighbours following incidents/ non-compliances.
All employees and contractors	• Comply with all requirements in this plan. • Report all potential environmental incidents to the Environmental Officer/Quarry Manager immediately. • Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment. • Follow any instructions provided by the Quarry Manager.

1.3.2 Hold Points

Hold points relating to water management at the Quarry are:

- Under condition 18E of Schedule 3 of the Consent, Daracon cannot commence quarrying operations in the Extension Area until groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump is installed in consultation with the Department of Planning, Industry and Environment (DPIE) – Water (or other timeframe as agreed by the Planning Secretary). This bore (bore P3) as well as three additional monitoring bores were installed and registered as of 26 November 2021.

- Under condition 23D (c) of Schedule 3 of the Consent, Daracon cannot commence infilling of the Southern Void until the Dewatering Management Plan (refer to **Section 6.0**) has been approved by the Planning Secretary.

- Under condition 18B of Schedule 3 of the Consent, Daracon cannot carry out any works on Crown Land or allow controlled discharges of water to Doughboy Hollow Creek until the necessary licences and/or approvals from DPIE Crown Lands (Crown Lands) have been obtained.

- Under condition 18C of Schedule 3 of the Consent, Daracon cannot carry out any works described in the MOD 2 EA within the Right of Carriageway which burdens Lot 1 DP 1001734 until the necessary licences and/or approvals from the Australian Rail Track Corporation (ARTC) prior have been obtained.

- Under condition 18D of Schedule 3 of the Consent, Daracon cannot undertake any excavation exceeding 2 m in depth within 25 m of the Main Northern Railway corridor unless otherwise approved in writing by ARTC.

- A licence from ARTC approving the of construction of water management infrastructure in the vicinity of the Main Northern Railway as presented in **Appendix A** must be obtained prior to the commencement of construction of works adjacent to the rail corridor.

- A Water Access Licence (WAL) in the Liverpool Ranges Basalt MDB Water Source with sufficient share entitlement to account for the maximum predicted groundwater take must be obtained within 12 months of submission of the Groundwater Monitoring Program (**Section 7.0)**. ~~commencement of quarry operations.~~

1.4 Water Management System Upgrade Schedule

New water management infrastructure, including the expanded Tertiary Basin and water treatment facility will be constructed and commissioned prior to commencement of quarrying in the new extraction area. Although the exact timeframes associated with entering the extension area are unknown at this time, we expect quarrying in the extension area to commence sometime in late 2023.

1.5 Compliance Requirements

1.5.1 Consent Conditions

Table 1.2 presents the Consent conditions relevant to water management at the Quarry.

Table 1.2 Consent Conditions

Condition	Requirement	Section(s) Addressed
Schedule 2 – Administrative Condition		
Obligation to Minimise Harm to the Environment		
1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	**Sections 1.2**
Operation of Plant and Equipment		
13	The Applicant must ensure that all plant and equipment used at the site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner	**Sections 3.4.3** and **5.4**
15	Within three months of: (a) the submission of an incident report under condition 3 of Schedule 5; (b) the submission of an Annual Review under condition 4 of Schedule 5; (c) the submission of an Independent Environmental Audit under condition 5 of Schedule 5; (d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise), the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.	**Section 9.0**
16	The Applicant must continue to apply existing management strategies, plans or programs approved prior to the approval of MOD 2, until the approval of a similar plan, strategy or program following the determination of MOD 2.	**Section 1.3**

Condition	Requirement	Section(s) Addressed
17	If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review. ***Note:*** *This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.*	**Section 9.0**
Schedule 3 – Specific Environmental Conditions		
Surface and Ground Water		
18A.	The Applicant must ensure that the sediment basin described in EA MOD 2 and any associated drainage structures required for the carrying out of the development are located wholly within the site, except as authorised in writing by ARTC and/or DPIE Crown Lands (as relevant).	**Section 1.5.5**
18B.	The Applicant must obtain any necessary licences and/or approvals from DPIE Crown Lands under the Crown Lands Management Act 2016 prior to: (a) carrying out any works on Crown Land; or (b) allowing the controlled discharge of water from the site to Doughboy Hollow Creek.	**Section 1.5.5**
18C.	The Applicant must obtain any necessary licences and/or approvals from the ARTC prior to carrying out any works described in the MOD 2 EA within the Right of Carriageway which burdens Lot 1 DP 1001734.	**Section 1.5.5**
18D.	The Applicant must not undertake any excavation exceeding 2 m in depth within 25 m of the Main Northern Railway corridor unless otherwise approved in writing by ARTC.[a] [a] *The 25 m setback is to be measured from the site boundary adjacent to the Main Northern Railway.*	**Section 1.5.5**
18E.	Prior to commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary), the Applicant must install a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump, in consultation with DPIE Water. *Notes:* • *The in-pit sump is shown in Appendix 1* • *The purpose of the groundwater monitoring bore is to inform the development of the Groundwater Monitoring Program*	**Sections 1.5.5, 2.2 and 7.0 and Appendix C**
18F.	The Applicant must ensure that any works to be conducted on waterfront land are carried out in accordance with Guidelines for Controlled Activities on Waterfront Land (2018) and in consultation with DPIE Water.	**Section 5.3**
Surface Water Discharges		
19.	The Applicant must only discharge water from the site in accordance with the provisions of an EPL.	**Section 3.4**
Site Water Management Plan		
20.	The Applicant must prepare a Site Water Management Plan for the development,[a] in consultation with EPA, DPIE Water, DPIE Crown Lands and ARTC, and to the satisfaction of the Planning Secretary. This plan must be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary, and must include: (c) a Site Water Balance;	**Section 1.5.5** and **Appendix D** **Section 4.0**

Condition	Requirement	Section(s) Addressed
	(d) an Erosion and Sediment Control Plan; (e) a Surface Water Management Plan; (f) a Groundwater Monitoring Program; and (g) a Dewatering Management Plan.[b] [a] *The Site Water Management Plan must incorporate the existing quarry operations and operations within the extension area* [b] *In accordance with condition 23D of this Schedule, the Planning Secretary may waive the requirement for a Dewatering Management Plan if no pit dewatering is required*	**Section 5.0** **Section 3.0** **Section 7.0 and Appendix C** **Section 6.0**
Site Water Balance		
21.	The Site Water Balance must include details of: (a) sources and reliability of water supply; (a1) predicted annual inflows to and outflows from the site; (b) water storage capacity; (a2) water use and management on the site; (a3) licensed discharge points and limits; and (a4) reporting procedures, including the annual preparation of an updated site water balance during quarrying operations.	**Section 4.0**
Erosion and Sediment Control Plan		
22.	The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of the Managing Urban Stormwater: Soils and Construction Manual (Landcom 2004, or its latest version); (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to maintain the structures over time.	**Section 5.0**
Surface Water Management Plan		
23.	The Surface Water Management Plan must include: (a) detailed baseline data on surface water quality in Doughboy Hollow Creek; (b) flow modelling of Doughboy Hollow Creek; (c) surface water impact assessment criteria, including trigger levels for investigating any potentially adverse impacts, and surface water management performance measures; (d) a detailed description of the surface water management system on the site, including the: (i) clean water diversion system; (ii) erosion and sediment controls; (iii) dirty water management system; and (iv) water storages;	**Section 3.0** **Section 3.1** **Section 3.2** **Section 3.3** **Section 3.4**

Condition	Requirement	Section(s) Addressed
	(e) a program to monitor and evaluate: (i) any surface water discharges; (ii) the effectiveness of the water management system, particularly in minimising the risk of uncontrolled discharges from the site; and (iii) surface water flows and quality in watercourses and/or waterbodies that could potentially be impacted by the development;	**Section 3.5**
	(f) a protocol for identifying and investigating any exceedances of the surface water impact assessment criteria and for notifying the Department and relevant stakeholders of these events; and	**Section 3.6**
	(g) a trigger action response plan to respond to any exceedances of the relevant performance measures or performance criteria.	**Section 3.6**
23A.	The Applicant must submit the Site Water Balance, Erosion and Sediment Control Plan and Surface Water Management Plan to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).	

Condition	Requirement	Section(s) Addressed
Groundwater Monitoring Program		
23B.	The Groundwater Monitoring Program must: (a) incorporate at least 12 months of baseline data on groundwater levels obtained from the monitoring bore required under condition 18E of this Schedule; (b) include groundwater performance criteria, including trigger levels for identifying and investigating any potentially adverse groundwater impacts (or trends) associated with the development; (c) include a program to identify, report on and respond to any unauthorised groundwater interference, including inflows into extraction areas or interaction between on-site water storages and the groundwater system; and (d) include a protocol to obtain appropriate water licence(s) for any groundwater take; and (e) be submitted to the Planning Secretary for approval within 12 months of commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary).	**Section 7.0 and Appendix C**
Dewatering Management Plan		
23D	Unless otherwise agreed by the Planning Secretary[a], the Applicant must prepare a Dewatering Management Plan for the overburden infill area[b] to the satisfaction of the Planning Secretary. This plan must: (a) include details of: (i) any pumping or pipeline infrastructure to be used for dewatering activities; (ii) proposed water transfer and discharge arrangements; and (b) include a program to monitor and report on any dewatering activities that involves any discharges from the site; and (c) be submitted to the Planning Secretary for approval prior to carrying out emplacement activities in the overburden infill area. *[a] The Planning Secretary may waive the requirement for a Dewatering Management Plan if no pit dewatering is required* *[b] The overburden infill area is shown in Appendix 2*	**Section 6.0** **Sections 1.3.2 and 6.0**
23E	The Applicant must implement the Site Water Management Plan as approved by the Planning Secretary.	**Section 1.3**
Schedule 4 Additional Procedures		
Notification of Landowners		
1	If the results of monitoring required in Schedule 3 identify those impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant must notify the Planning Secretary and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.	**Section 8.1**

Condition	Requirement	Section(s) Addressed
Independent Review		
2.	If a landowner (excluding quarry owned properties) considers that the operations of the development are exceeding the impact assessment criteria in Schedule 3 then he/she may ask the Planning Secretary in writing for an independent review of the impacts of the development on his/her land.	**Section 8.2**
3.	If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.	**Section 8.2**
4.	If the Planning Secretary is satisfied that an independent review is warranted, within 3 months, or as otherwise agreed by the Planning Secretary and the landowner, of the Planning Secretary's decision, the Applicant must: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to: (i) consult with the landowner to determine their concerns; (ii) conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3 of this consent; and (iii) if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Planning Secretary and landowner a copy of the independent review; and (c) comply with any written requests made by the Planning Secretary to implement any findings of the review.	**Section 8.2**
Schedule 5 Environmental Management, Monitoring, Auditing & Reporting		
Reporting		
3.	Incident Notification The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.	**Section 8.3**
3A.	Non-Compliance Notification Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. **Note:** A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	**Section 8.4**

Condition	Requirement	Section(s) Addressed
4	By the end of March in each year after the granting of the development consent, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current financial/calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the: (i) relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) monitoring results of previous years; and (iv) relevant predictions in the documents listed condition 2(a)-(c) of Schedule 2. (c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence. (d) evaluate and report on: (i) the effectiveness of the noise and air quality management systems; and (ii) compliance with the performance measures, criteria and operating conditions of this consent; (e) identify any trends in the monitoring data over the life of the development; (f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.	**Section 8.5**

Condition	Requirement	Section(s) Addressed
5	Prior to 31 December 2012, and every 5 years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be led by a suitably qualified, experienced and independent auditor whose appointment has been endorsed by the Planning Secretary; (b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Planning Secretary) whose appointment has been endorsed by the Planning Secretary; (c) be carried out in consultation with the relevant agencies and the CCC; (d) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and mining leases for the development (including any assessment, strategy, plan or program required under these approvals); (e) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and this consent; (f) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the abovementioned approvals and this consent; and (g) be conducted and reported to the satisfaction of the Planning Secretary.	**Section 8.6**
6	Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.	**Section 8.6**
8	Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Applicant must: (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and (b) put a copy of the relevant document/s on its website.	**Section 8.7**

Condition	Requirement	Section(s) Addressed
9	During the development, the Applicant must: (a) include a copy of this consent, as may be modified from time to time, on its website; (b) provide a full summary of monitoring results required under this consent on its website; and (c) update these results on a regular basis (at least every 6 months).	**Section 8.7**

1.5.2 Environmental Management Commitments

Table 1.3 presents the environmental commitments relating to water management at the Quarry.

Table 1.3 Statement of Commitments

Item No.	Item	Commitment	Section(s) addressed
2	Statutory Requirements	All necessary licences, permits and approvals will be obtained and maintained for the project.	**Sections 1.5.3, 1.4.4, 1.5.5 and 3.4**
5	Water Management	The proponent will prepare and implement a Surface Water Management Plan for the project that will include: an Erosion and Sediment Control Plan (including procedures to minimise erosion, capture of sediment on-site, and maintenance of control structures); a Site Water Balance; and A Water Quality Monitoring Program	**Section 3.0** **Section 5.0** **Section 4.0** **Section 3.5.1**
23	Annual Reporting	The proponent will prepare and submit to the Director-General and Annual Environmental Management Report (AEMR). The AEMR will: • include a summary of the environmental monitoring results for the project for the past year; • include an analysis of the monitoring results against relevant limits/criteria and monitoring results from previous years; and • identify and discuss any non-compliances during the past year and detail any actions taken to ensure compliance.	**Section 8.5**

1.5.3 Environment Protection Licence

The Quarry operates under Environmental Protection Licence (EPL) 1115 issued under the *Protection of the Environment Operations Act 1997* (NSW Government). EPL 1115 includes the following conditions relating to water resources:

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
5	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Outlet of sediment basin to Doughboy Hollow Creek. Exact coordinates and map to be provided upon completion of sediment basin expansion works.

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the *Protection of the Environment Operations Act 1997*

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 5

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre	-	-	-	10 and none visible
pH	pH	-	-	-	6.5-8.5
Total suspended solids	milligrams per litre	20	35	-	50

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

POINT 5

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Weekly during any discharge	Representative sample
pH	pH	Continuous during discharge	Representative sample
Total suspended solids	milligrams per litre	Continuous during discharge	Representative sample

1.5.4 Water Licences

A Water Supply Works Approval and two associated Water Access Licences (WALs) for extraction of surface water from Doughboy Hollow Creek (refer to **Table 1.4**) apply to the Quarry land holding. However, surface water extraction has not been undertaken for at least 10 years as water captured within the WMS has been sufficient to meet operational demands.

Additionally, and subject to the findings of the ongoing Groundwater Study, the need for a Water Access Licence to cover any interception of groundwater will be determined and obtained if necessary.

Table 1.4 Water Access Licences and Works Approvals

Licence/Approval	Type	Entitlement (ML)	Status
WAL 6242	Domestic and Stock	1	Current
WAL 6243	Unregulated River	4	Current
90WA804256	Water Supply Works Approval for WALs 6242 & 6243	-	Expires 18 January 2031

1.5.5 Stakeholder Consultation

Daracon has undertaken consultation with Crown Lands, ARTC, the EPA and DPE Water as required by the Consent. Table 1.5 provides a summary of the consultation undertaken up to 9 May 2023 including the outcomes of consultation, matters resolved and unresolved and actions to be undertaken by Daracon to resolve any remaining disagreements.

Table 1.5 Agency Consultation

Agency	Description	Outcomes	Daracon Actions
Crown Lands	• Provision of draft SWMP for comment • Application for licence to construct, operate (including controlled discharges of surplus water to Doughboy Hollow Creek) and maintain water management structures (e.g. drains, sediment basin) that are proposed to be located on Crown Land	• No comments on SWMP provided by Crown Lands other than confirmation of the requirement for licence to undertake works located on Crown Land. • Application for Crown Lands licence submitted 18 November 2022. • Crown Lands licence offer (licence number RN 638192) provided to Daracon 17 March 2023. • Licence offer accepted by Daracon 3 April 2023. • Daracon received formal execution of the licence by the Minister on the 8th May 2023 as shown in Appendix D.	No works on Crown Lands to be undertaken prior to granting of Crown Lands licence as per hold point in **Section 1.3.2**.

Agency	Description	Outcomes	Daracon Actions
ARTC	• Provision of draft SWMP for comment • Request approval to excavate to a depth greater than 2 m within 25 m of the Main Northern Railway to enable construction of water management structures	• No comments on SWMP provided by ARTC. • 'Agreement in Principle' ('AIP') for construction of water management structures as presented in **Appendix A** of this SWMP provided by ARTC on 21 April 2020 ('AIP' presented in **Appendix D** of this SWMP). • Extension of 'AIP' to 30 September 2021 and again until 31 March 2022 provided by ARTC. • Daracon requested further extension to 'AIP' in March 2022 and February 2023, and currently awaiting response from ARTC. • In accordance with the 'AIP', ARTC require Daracon to provide further information for review (including final design plans) prior to issue of a licence for construction of the water management infrastructure.	• Follow up request for extension of 'AIP'. • Provide ARTC with information required for review as listed in the 'AIP' when requesting a licence to construct water management infrastructure. • No water management infrastructure construction works to be undertaken prior to receipt of ARTC licence as per hold point in **Section 1.3.2**.
EPA	Provision of draft SWMP for comment	EPA response in 5 August 2021 indicated that the EPA does not provide advice on or endorsement of management plans prepared for planning assessments and would not be providing further comment.	-

Agency	Description	Outcomes	Daracon Actions
DPE Water	Provision of draft SWMP for comment	• Comments on SWMP received from DPE Water on 28 April 2022 relating to requirement to install monitoring bore, development of a groundwater monitoring program and requirement to obtain a water access licence (WAL) and sufficient entitlement in groundwater source. • Issues raised by DPE Water resolved as detailed in correspondence contained in **Appendix D** of this SWMP.	Obtain a WAL and sufficient entitlement to cover the maximum predicted groundwater take within 12 months of submission of the Groundwater Monitoring Program (refer to **Section 7.0**) as per hold point in **Section 1.3.2**.

1.6 Guidelines and Policies

The following guidelines have been referenced and applied as required for the preparation of this SWMP:

- The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) (Australian and New Zealand Governments and Australian state and territory governments, 2018).
- Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004).
- Managing Urban Stormwater – Soils and Construction, Volume 2E: Mines and Quarries (DECC, 2008).
- Best Practice Erosion and Sediment Control (International Erosion Control Association (Australasia), 2008).

2.0 Context

2.1 Surface Water

2.1.1 Catchment and Hydrology

The Quarry is located in the immediate catchment of Doughboy Hollow Creek and an unnamed tributary of Borambil Creek which are within the broader Namoi River catchment. Doughboy Hollow Creek drains north to Chilcotts Creek which drains north west to Borambil Creek. From confluence with Chilcotts Creek, Borambil drains north west to Warrah Creek which flows north west to the Mooki River. The Mooki River drains north to the Namoi River at Gunnedah

Doughboy Hollow Creek and Borambil Creek are within the area regulated by the *Water Sharing Plan for the Namoi Unregulated Rivers and Peel Unregulated River Water Sources*. There are 26 unregulated surface water sources and four alluvial groundwater sources covered by the *Water Sharing Plan for the Namoi Unregulated Rivers and Peel Unregulated River Water Sources* and the Quarry is located within the Warrah Creek surface water source.

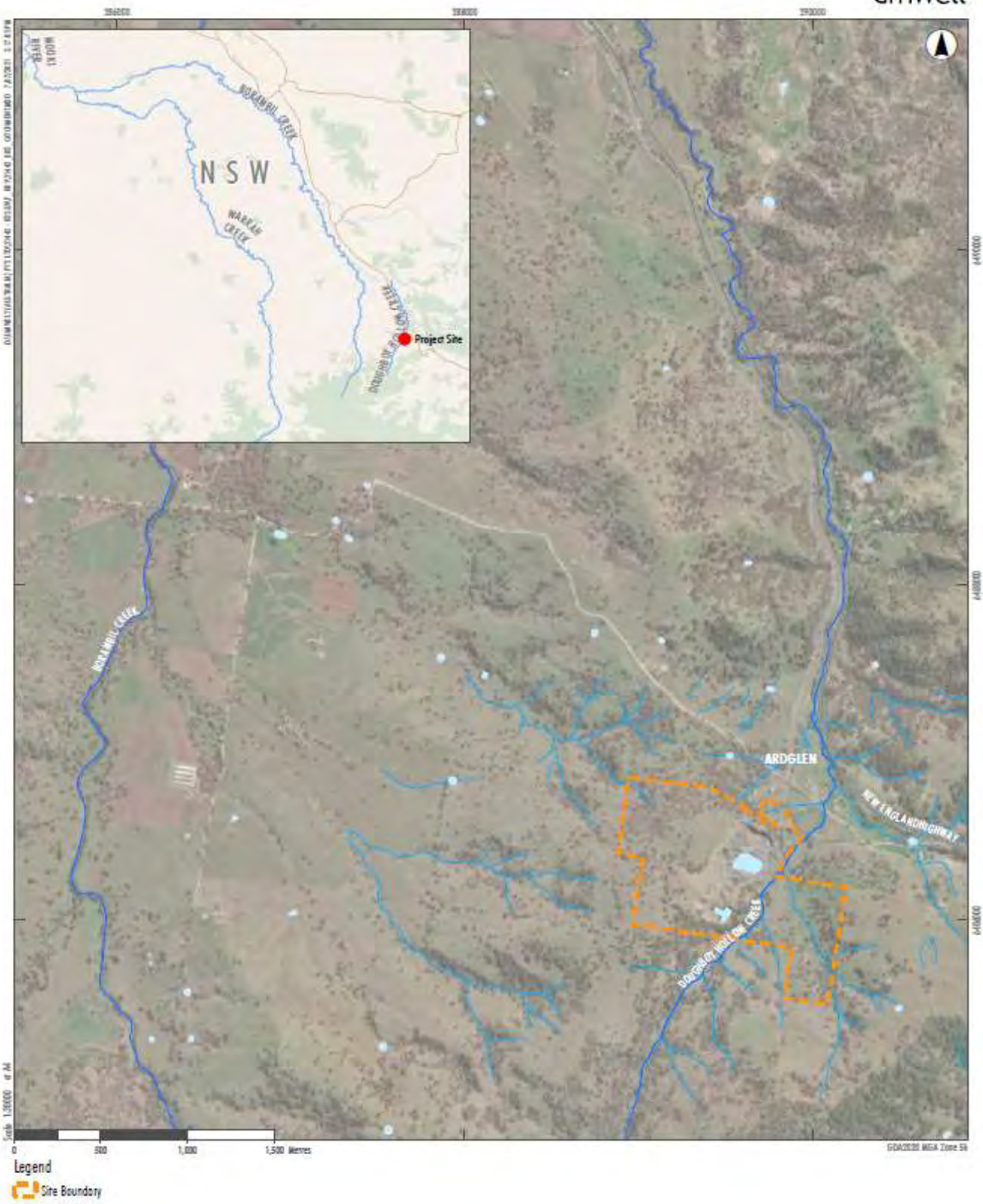

Figure 2.1 Surface Water Catchment Context

2.1.2 Soils

The NSW Office of Environment and Heritage (OEH) online mapping tool eSpade shows that the Quarry site occupies areas mapped as the Moan (mnz) and Glen Oak (gkz) soil landscapes.

Soils on the upper to mid slops of the Moan soil landscapes are typically shallow (25 - <50 cm), moderately well-drained Haplic Eutrophic Red, Brown and occasionally Black Chromosols and Dermosols (Chocolate Soils and Euchrozems). Localised gully erosion hazard and widespread sheet erosion hazard have been observed on the Moan soil landscape.

Soils on the upper slopes of the Glen Oak soil landscapes are typically moderately deep (50 - <100 cm), moderately well-drained Haplic Eutrophic Red Ferrosols (Euchrozems). Localised gully erosion hazard and localised sheet erosion hazard have been observed on the Glen Oak soil landscape.

Table 2.1 presents relevant modelled soil properties sourced from eSpade (OEH, 2021).

Table 2.1 Quarry Site Modelled Soil Properties

Parameter	Value
Soil Erodibility (as used in the Revised Universal Soil Loss Equation (RUSLE))	0.05 to 0.06
Exchangeable Sodium Percentage (ESP)	<4% (0 – 100 cm depth)
Clay Percentage	>40% (0 – 100 cm depth)
Silt Percentage	>20 - 25% (0 – 100 cm depth)
Sand Percentage	<30% (0 – 100 cm depth)
Electrical Conductivity (EC)	<0.3 dS/m (0 – 100 cm depth)
pH ($CaCl_2$)	>5.5 – 6.5 (0 – 100 cm depth)
Cation Exchange Capacity (CEC)	>20 – 40 $cmol_c$/kg (0 – 100 cm depth)
Soil Organic Carbon	>2 – 3% (0 – 30 cm depth) >0.5 – 1% (30 – 100 cm depth)

Based on the data in **Table 2.1** the Quarry site soils are considered to:

- be non-dispersive (as the ESP is less than 6%) but fine, i.e. Type F (as the percentage of clay and silt is >30%)
- be non saline (EC <2 dS/m)
- have a slightly acidic to neutral pH
- have fertile top soils (i.e. medium to high CEC and organic carbon)
- be highly erodible which is consistent with the information contained in the soil landscape documents

2.1.3 Climate

The Quarry is located in the north west slopes region of NSW and has a warm and temperate climate. Rainfall and evaporation statistics based on data sourced from the SILO climate data base (from 1 January 1900 to 31 December 2020, SILO grid point -31.75 latitude, 150.8 longitude) are presented in **Table 2.2** and **Chart 2.1**.

Table 2.2 Rainfall and Evaporation Statistics

Statistic	Rainfall (mm)	Evaporation (mm)
10th Percentile	581	1,365
50th Percentile	859	1,459
90th Percentile	1,113	1,565
Average	860	1,461

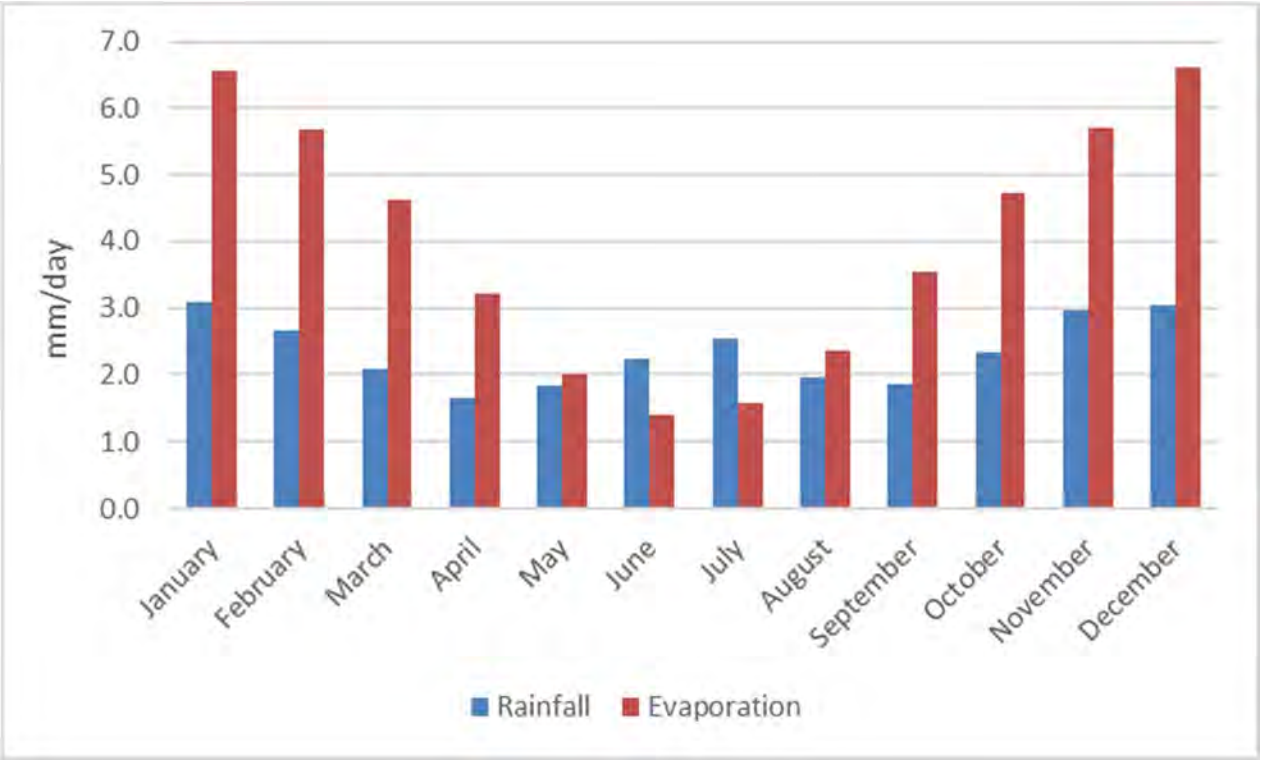

Chart 2.1 Average Daily Rainfall and Evaporation (1900 – 2020)

Table 2.3 presents the 1987 Australian Rainfall and Runoff Intensity Frequency Duration (IFD) rainfall intensities sourced from the BoM website for the Quarry site.

Table 2.3 Quarry Site Rainfall Intensities (mm/h)

Duration	1 Year	2 years	5 years	10 years	20 years	50 years	100 years	Duration
5 min	67.60	88.30	116.00	134.00	157.00	191.00	218.00	67.60
6 min	63.00	82.30	108.00	125.00	147.00	178.00	203.00	63.00
10 min	51.40	67.10	87.50	101.00	119.00	143.00	163.00	51.40
20 min	37.60	48.80	63.00	72.00	84.30	101.00	115.00	37.60
30 min	30.50	39.50	50.70	57.80	67.50	80.80	91.40	30.50
1 h	20.40	26.30	33.70	38.30	44.70	53.40	60.30	20.40
2 h	13.00	16.80	21.60	24.60	28.70	34.40	38.90	13.00
3 h	9.85	12.80	16.50	18.80	22.00	26.40	29.90	9.85
6 h	6.10	7.95	10.30	11.90	13.90	16.80	19.10	6.10
12 h	3.80	4.97	6.53	7.54	8.89	10.80	12.30	3.80
24 h	2.38	3.13	4.16	4.83	5.73	6.98	8.00	2.38
48 h	1.46	1.94	2.60	3.04	3.63	4.45	5.12	1.46
72 h	1.06	1.41	1.91	2.25	2.69	3.32	3.83	1.06

2.1.4 Baseline Surface Water Quality

Daracon monitors site water sources for pH, electrical conductivity (EC), total suspended solids (TSS) and oil and grease (O&G) on a monthly basis. Site water quality statistics for the period March 2017 to May 2021 and relevant ANZG default guideline values are presented in **Table 2.4** to **Table 2.7** and the monitoring locations are shown in **Figure 2.2**. Water quality results recorded below the laboratory limit of reading (LOR) have been assumed to be at the LOR for the purpose of the statistical analysis of results. It is noted that there was no discharge from the site water storages at the time of monitoring.

Table 2.4 Site Water pH

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	20th Percentile	80th Percentile	Maximum
In-Pit Sump (SW1)	6.50 – 8.00	0.01	41	41	9.11	9.30	9.65	9.96
Southern Void (SW2)			41	41	8.20	8.65	9.03	9.65
Tertiary Basin (SW3)			6	6	8.25	8.28	8.43	8.59
Rail Siding (SW4)			41	41	7.65	8.12	8.66	8.86

Table 2.5 Site Water EC (µS/cm)

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	20th Percentile	80th Percentile	Maximum
In-Pit Sump (SW1)	30 - 350	1	41	41	512	560	752	9290
Southern Void (SW2)			41	41	555	565	816	909
Tertiary Basin (SW3)			7	7	483	483	730	833
Rail Siding (SW4)			41	41	387	520	628	846

Table 2.6 Site Water TSS (mg/L)

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	20th Percentile	80th Percentile	Maximum
In-Pit Sump (SW1)	-	5	41	41	8	18	43	59
Southern Void (SW2)			41	32	5	7	24	48
Tertiary Basin (SW3)			7	6	5	43	93	140
Rail Siding (SW4)			41	31	4	7	17	129

Table 2.7 Site Water O&G (mg/L)

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	20th Percentile	80th Percentile	Maximum
In-Pit Sump (SW1)	-	5	41	1	5	5	5	7
Southern Void (SW2)			41	1	5	5	5	6
Tertiary Basin (SW3)			7	0	5	5	5	5
Rail Siding (SW4)			41	2	5	5	5	6

Daracon monitors water quality in Doughboy Hollow Creek upstream and downstream of the Quarry for pH, EC, TSS and O&G. Receiving water quality monitoring statistics for the period March 2017 to May 2021 and relevant ANZG default guideline values are presented in **Table 2.8** to **Table 2.10** and the monitoring locations are shown in **Figure 2.2**. A limited number of results are available for Doughboy Hollow creek due to the ephemeral nature of the stream. Water quality results recorded below the laboratory LOR have been assumed to be at the LOR for the purpose of the statistical analysis of results.

Table 2.8 Doughboy Hollow Creek pH

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	5th Percentile	20th Percentile	80th Percentile	95th Percentile	Maximum
Upstream (RW1)	6.50 – 8.00	0.01	7	7	7.25	7.31	7.45	7.68	7.48	8.15
Downstream (RW2)			11	11	7.33	8.04	7.68	7.95	8.12	8.18

Table 2.9 Doughboy Hollow Creek EC (µS/cm)

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	5th Percentile	20th Percentile	80th Percentile	95th Percentile	Maximum
Upstream (RW1)	30 - 350	1	7	7	377	447	618	736	565	1006
Downstream (RW2)			11	11	419	975	876	875	1,022	1118

Table 2.10 Doughboy Hollow Creek TSS (mg/L)

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	5th Percentile	20th Percentile	80th Percentile	95th Percentile	Maximum
Upstream (RW1)	-	5	7	3	5	5	5	6	7	8
Downstream (RW2)			11	2	5	5	5	5	42	79

Table 2.11 Doughboy Hollow Creek O&G (mg/L)

Monitoring Location	ANZG DGV	Limit of Reading	# Results	# Results >Limit of Reading	Minimum	20th Percentile	80th Percentile	Maximum
Upstream (RW1)	-	5	7	0	5	5	5	5
Downstream (RW2)			11	0	5	5	5	5

The historical water quality monitoring results indicate:

- Site water pH exceeds the ANZG upper DGV as well as typical Doughboy Hollow Creek pH results
- EC for both Doughboy Hollow Creek (upstream and downstream) and site water quality exceed the upper ANZG DGV

- Site water typically has higher TSS than Doughboy Hollow Creek and at times would exceed a typical EPL limit condition of 50 mg/L

- All TSS results in Doughboy Hollow Creek upstream and downstream of the Quarry were less than 10 mg/L except for one result of 79 mg/L (1 May 2020) recorded downstream of the Quarry. It is understood that there was no flow in Doughboy Hollow Creek at the time this water quality sample was collected and the elevated TSS concentration may be a result of disturbance of the creek bed when collecting the sample from pooled water. It is noted that the 80th percentile upstream TSS value is greater than the 80th percentile downstream TSS value.

Figure 2.2 Water Quality Monitoring Locations

2.2 Groundwater

The Quarry is located within the eastern extent of the Liverpool Ranges Basalt groundwater management area under the Murray Darling Basin (MDB) Fractured Rock Groundwater Sources (2020). In accordance with the Water Management Act 2000, groundwater intercepted within the Liverpool Ranges Basalt MDB Groundwater Source is required to be licenced, with the long-term average annual extraction limit set at 2,160 ML/year. It is understood that the previous Quarry operations may have experienced groundwater inflows, however, these have never been quantified.

Condition 18E of Schedule 3 of the Consent (refer to **Table 1.2**), requires Daracon to install a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump in consultation with DPE Water. Condition 20 of Schedule 3 of the Consent (refer to **Table 1.2**) requires the preparation of a Site Water Management Plan that includes a Groundwater Monitoring Program and Condition 23B of Schedule 3 of the Consent (refer to **Table 1.2**) requires that the Groundwater Monitoring Program incorporate at least 12 months of baseline data, performance criteria and a protocol for obtaining appropriate water licences for any groundwater take. The Groundwater Monitoring Program is required to be submitted to the Planning Secretary for approval within 12 months of commencing quarrying operations in the extension area. Refer to **Section 7** for additional information regarding the proposed groundwater monitoring regime.

3.0 Surface Water Management Plan

3.1 Doughboy Hollow Creek Baseline Water Quality

Water quality statistics for Doughboy hollow Creek are presented in **Section 2.1.4**.

3.2 Flow Modelling of Doughboy Hollow Creek

Flow modelling of Doughboy Hollow Creek has been undertaken to determine stream to inform the potential requirement to limit the flow rates of controlled discharges of treated water to the creek as well as inform the rehabilitation strategy for Doughboy Hollow Creek (that will include the removal of the weir from the creek) required under Condition 28 of Schedule 3 of the Consent.

The flow modelling includes estimates of stream velocities and tractive stresses and the results will be included as in the Landscape Management Plan required under Condition 27 of Schedule 3 of the Consent. Reference will be made to the flow modelling results during the detailed design of the water treatment and discharge system (refer to **Section 3.4.2** and **Appendix A**) to ensure maximum controlled discharge flow rates are limited, as required, to minimize the risk of erosive flows occurring in Doughboy Hollow Creek.

3.3 Surface Water Impact Assessment Criteria

Table 3.1 presents the surface water quality impact assessment criteria (IAC) for Doughboy Hollow Creek downstream of the Quarry based on either historical Doughboy Hollow Creek monitoring results upstream of the Quarry or ANZG DGVs for upland river aquatic ecosystems. It is important to note that an exceedance of the IAC does not necessarily indicate a Quarry impact on the downstream receiving environment. Rather, the exceedance triggers the requirement to investigate the potential causes of the exceedance which could include natural variations in water quality and/or impacts associated with water draining from the Quarry.

Table 3.1 Impact Assessment Criteria - Doughboy Hollow Creek Downstream

Parameter	IAC[1]	Trigger Level	Basis
pH	7.45 – 8.04	Level 1	20th and 80th percentile of Doughboy Hollow Creek upstream monitoring results
EC (uS/cm)	618 – 876		
Turbidity (NTU)	2 - 25		ANZG DGV for upland river aquatic ecosystems
Total Suspended Solids (mg/L)	6		80th percentile of Doughboy Hollow Creek upstream monitoring results
Oil and Grease (mg/L)	5		
pH	7.31 – 8.13	Level 2	5th and 95th percentile of Doughboy Hollow Creek upstream monitoring results
EC (uS/cm)	447 – 975		
Total Suspended Solids (mg/L)	7		

Note: [1] The IAC only apply when the Quarry is not discharging. During discharge, relevant EPL water quality limit conditions will apply as the IAC.

It should be noted that the IAC values based on Doughboy Hollow Creek upstream water quality monitoring presented in **Table 3.1** are based on a limited data set of only seven results (for the period March 2017 to May 2021) due to the ephemeral nature of stream. The IAC values will be revised in future SWMP updates when more monitoring results are available.

3.4 Surface Water Management System

3.4.1 Existing Water Management

The existing Quarry water management system (WMS) consists of:

- A Southern Void which has a water storage capacity of approximately 21 ML and captures runoff from the former Southern Void extraction area which has been partially infilled
- A clean water diversion drain directing runoff from upslope undisturbed catchments around the quarry
- A 30ML In-Pit Sump to capture runoff from the extraction area and any overflows from the Southern Void
- A 2.6 ML capacity sediment basin (the Tertiary Basin) which captures runoff from the process plant area, rail siding and any overflows from the In-Pit Sump. Overflows from the Tertiary Basin drain to Doughboy Hollow creek.

Presently the Quarry is in care and maintenance and there is no water usage. The water storages allow for settling of suspended solids entrained in runoff. Runoff captured in the Tertiary Basin may be transferred to the In-Pit Sump and Southern Void to manage basin inventory. Runoff captured in the In-Pit Sump may also be transferred to the Southern Void. Daracon has committed to a significant improvements to site water management in the Mod 2 EIS including the implementation of a water treatment system and management of off-site discharges (refer **Section 3.4.2** and **Appendix A**). A variation to EPL 1115 was recently obtained to accommodate the WMS improvements including allowance of controlled discharges of treated water to Doughboy Hollow Creek, and now, subject to DPE's approval of the SWMP, these improvements will proceed promptly

3.4.2 Project Water Management

Figure 3.1 presents a plan of the Quarry WMS that will be in place at the commencement of quarrying in the extension area (current arrangement) and **Figure 3.2** presents a plan of the WMS when the Quarry pit reaches the maximum extent. The Quarry will operate with the existing WMS until extraction commences in the recently approved extension area. The ongoing Quarry WMS strategy is to:

- Direct clean runoff from undisturbed catchments around the disturbed Quarry catchment
- Capture dirty runoff from the disturbed Quarry catchment within the WMS
- Maximise the use of captured dirty water to meet operational demands and minimise clean water imports

As with the existing Quarry WMS, runoff from the undisturbed catchment to the west of the existing Quarry extraction area in the early stages of the Project will be intercepted by a rock lined drain that flows from south to north along the western edge of the pit. Runoff from the Quarry extraction area will continue to drain to the In-Pit Sump which has an existing capacity of approximately 30 ML. Runoff from the Southern Void section of the Quarry catchment is captured within the Southern Void which is estimated to have a capacity of approximately 21 ML.

As extraction progresses into the approved extension area (refer to **Figure 3.2**), the rock lined drain diverting the undisturbed catchment upslope of the Quarry Pit will be realigned to direct runoff to the west and into the unnamed tributary of Borambil Creek (refer to **Section 2.1.1**). The capacity of the In-Pit Sump will also be progressively increased as the extraction area footprint increases to a maximum capacity of 60 ML when the extraction area footprint as at its maximum. The maximum capacity of the expanded In-Pit Sump (i.e. 60 ML) was selected to provide increased containment capacity to accommodate runoff from the 12 hour 5% AEP while maintaining permanent water storage capacity to manage surplus water inventories. In-Pit Sump water inventories will be managed by dewatering to the Tertiary Basin (refer to Dewatering Management Plan in **Section 6.0**) to ensure sufficient freeboard is maintained to contain pit catchment runoff from a 20 year (i.e. 5% Annual Exceedance Probability) 12 hour duration storm event. Runoff volumes from the 12 hour 5% AEP storm event have previously been estimated by AECOM (2017) for catchment areas of approximately 15 ha (indicated as existing scenario) and 27 ha (indicated as a mid-term scenario with respect to the pit extension) to be 12.7 ML and 22.7 ML respectively based on a conservative runoff coefficient of 0.9. Revised estimates (refer to **Table 3.2**) of existing and future runoff volumes have been prepared based on revised catchment areas, the rainfall depth 2016 Australian Rainfall and Runoff (AR&R) 12 hour 5% AEP storm event (i.e. 95 mm) and a conservative runoff coefficient of 0.9.

Table 3.2 Pit and Southern Void Catchment Runoff Volumes, 12 hour 5% AEP Strom Event

Scenario	Approximate Catchment Area (ha)	Runoff Volume (ML)
Existing pit catchment draining to 30 ML In-Pit Sump	11.56[1]	9.9
Pit extension at maximum extent draining to 60 ML expanded In-Pit Sump	32.33[1]	27.6
Southern Void (existing and future)	3.6[2]	3.1

Notes: [1] Excludes Southern Void catchment

[2] Potential future infilling of Southern Void may result in this catchment draining to the In-Pit Sump and therefore
requiring the In-Pit Sump to be managed with additional freeboard.

A water treatment and licenced discharge system (refer to **Figure 3.3** and preliminary design details in **Appendix A**) will be implemented as part of the Project. A variation to the existing EPL has been obtained to allow discharges to Doughboy Hollow Creek with the inclusion of water quality and quantity limit conditions. The water treatment and licenced discharge system will include:

- increasing the capacity of the existing sediment basin, i.e. the Tertiary Basin, from approximately 2.6 ML to 7.7 ML and incorporation of primary and secondary sediment chambers in the expanded Tertiary Basin

- the installation of a pipe and manual valve arrangement to allow dewatering of the In-Pit Sump to the expanded Tertiary Basin
- installation of a water treatment chemical dosing system to allow chemical dosing of coagulant to aid settling of solids in the expanded Sediment Basin (coagulant to be dosed in the Tertiary Basin inlet channel) and acid for pH correction (hydrochloric acid to be dosed inline to the transfer pipe between the Tertiary Basin and pH Reaction Tank). Note that chemical dosing will be undertaken as required, i.e. when required to adjust the quality of water within the Tertiary Basin to meet the EPL discharge concentration limits
- installation of a pH Reaction Tank with continuous pH monitoring to ensure discharge pH, which will occur via the overflow of the Reaction Tank, is within EPL limits (limits determined as part of EPL variation process)
- appropriate controls and interlocks to ensure optimal chemical dosing and immediately cease discharges should treated water pH deviate outside of EPL limits

Water discharges will be initiated manually following testing of treated water in the Tertiary Basin to ensure the TSS, pH and Oil and Grease concentrations are within EPL limits (refer to Section 1.5.3). A detailed description of the proposed water treatment process is presented in **Appendix A**. Discharges may also occur directly from the Tertiary Basin via perforated riser and manual valve provided water quality within the dam is within EPL limits (limits determined as part of EPL variation process).

Runoff from the process plant catchment and stockpiles will drain to the expanded Tertiary Basin. Runoff from the fuel storage and handling area will pass through a hydrocarbon filter and be collected in a concrete sump that will overflow to the Tertiary Basin.

Infilling of the Southern Void will commence following the start extraction in the extension area subject to the saleability and market demand for overburden materials. Dewatering of the infill area to the In-Pit Sump will be undertaken as required to ensure sufficient freeboard is maintained in the Southern Void to contain runoff from the 12 hour 5% AEP storm event which is estimated to be approximately 3.1 ML. As the Southern Void is infilled and the water storage capacity of the void is reduced more frequent dewatering will be required (refer to Dewatering Management Plan **Section 6.0**). As the Southern Void nears completion of filling, the Southern Void catchment will drain directly to the In-Pit Sump. As such, the In-Pit Sump will need to be managed to accommodate the additional runoff from the Southern Void catchment for the 12 hour 5% AEP storm event.

During high and/or prolonged rainfall events in excess of the 12 hour 5% AEP, Southern Void will spill to the In-Pit Sump and the In-Pit Sump will spill to the Tertiary Basin.

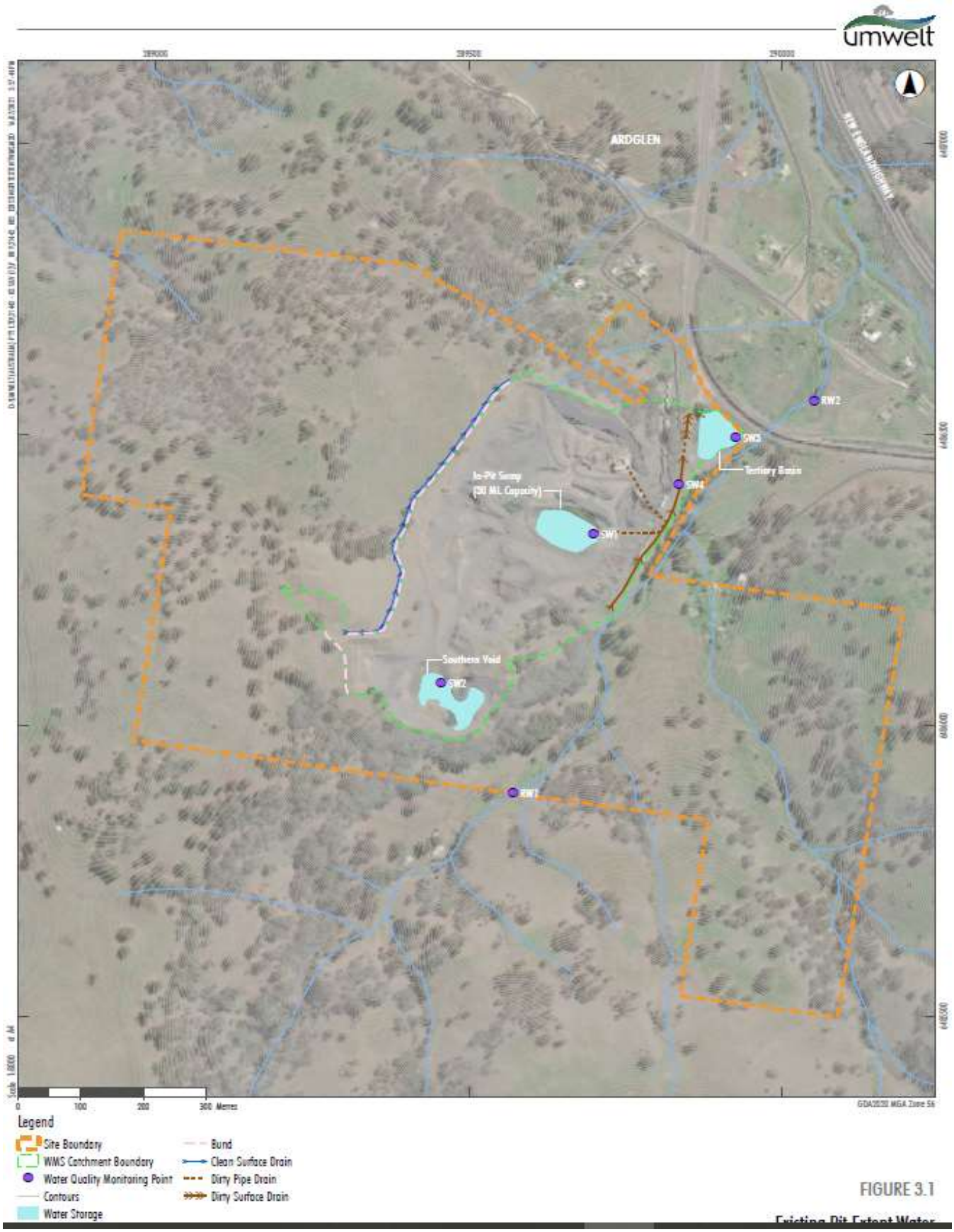

Figure 3.1 Existing Pit Extent Water Management System Plan

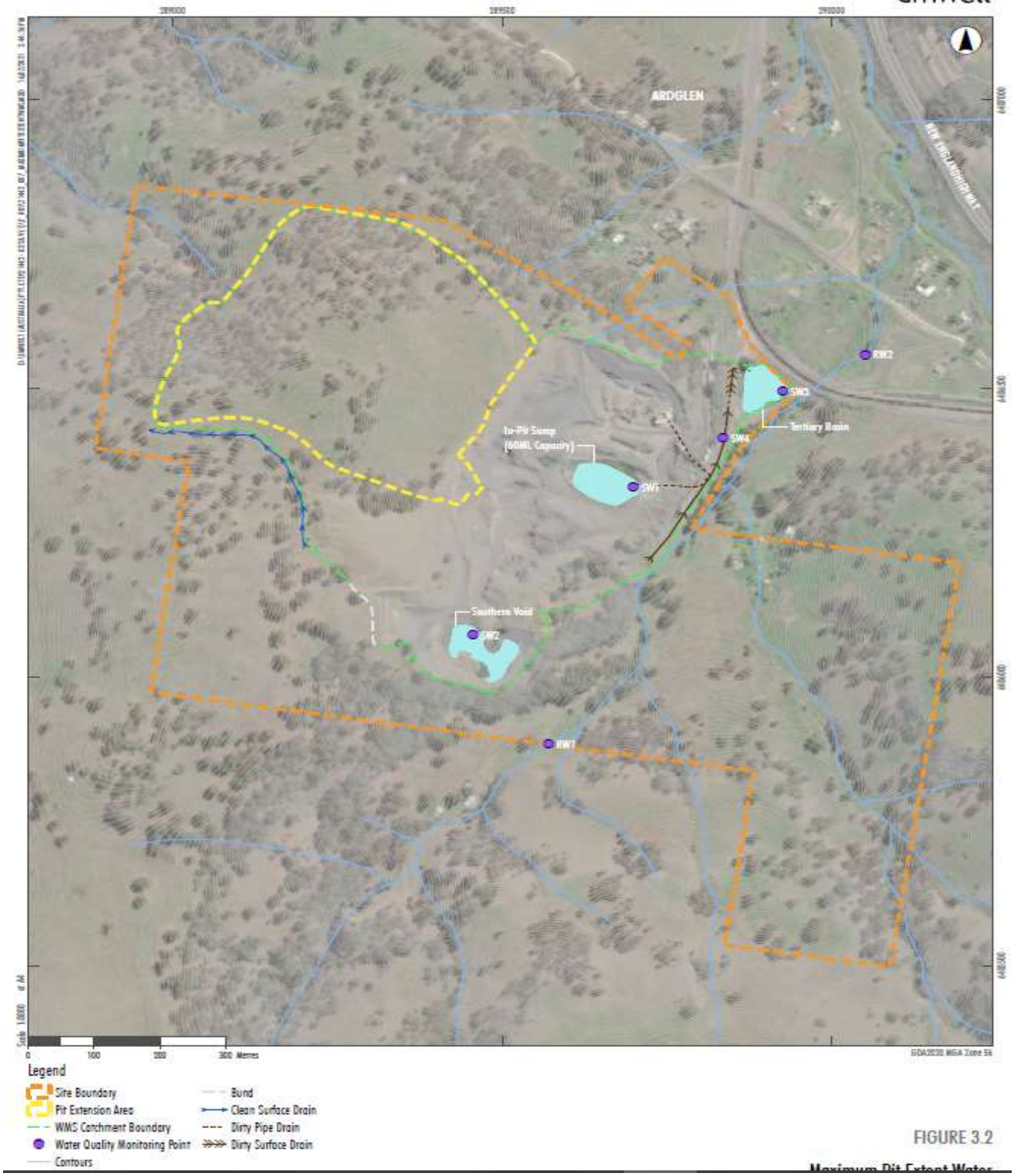

Figure 3.2 Maximum Pit Extent Water Management System Plan

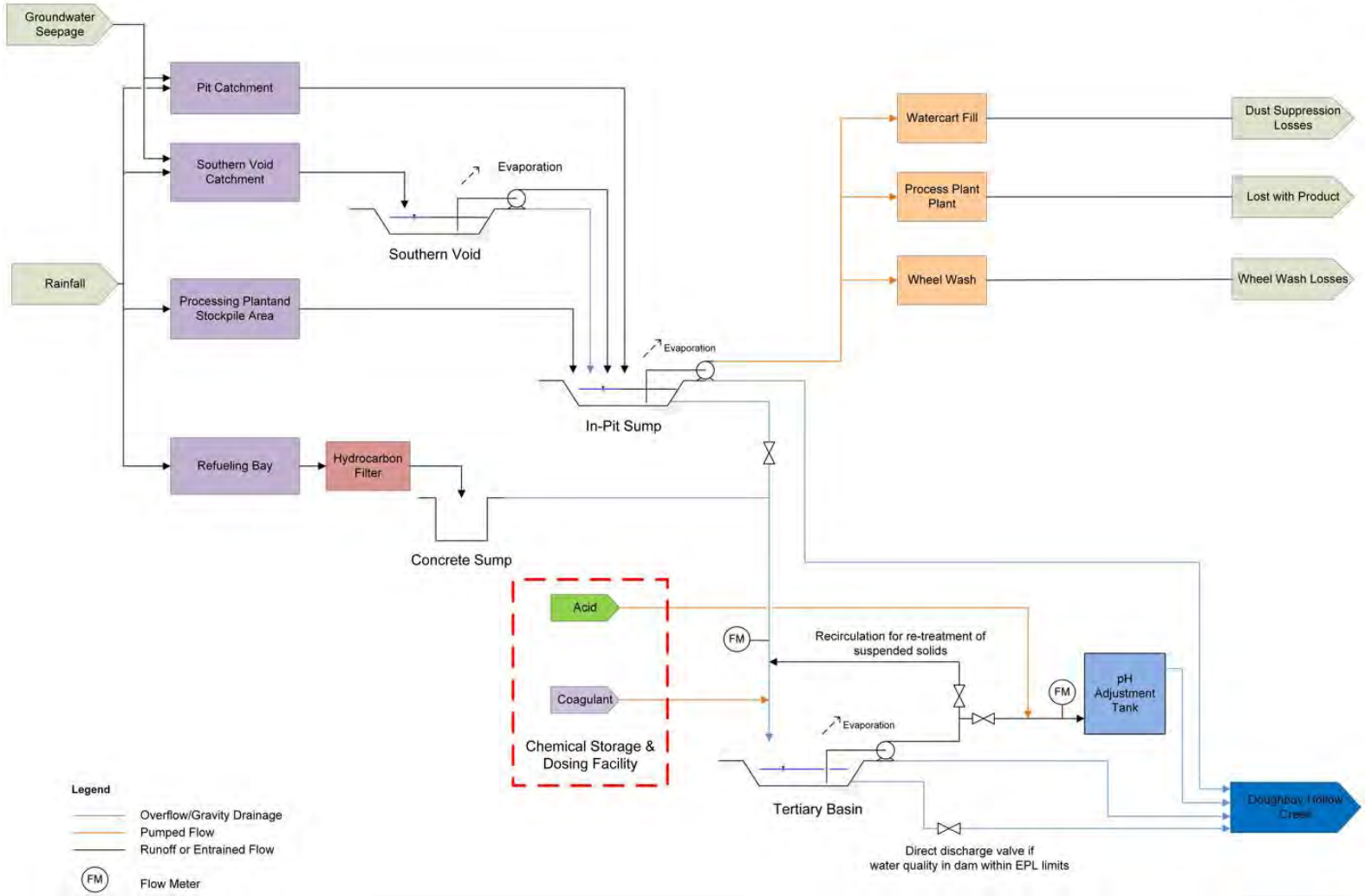

Figure 3.3 Water Management System Schematic

3.4.3 Inspection and Maintenance

All surface water management plant and equipment (including pumps and instrumentation) used on site will be maintained in a proper and efficient condition, operated in a proper and efficient manner and will be inspected and maintained in accordance with manufacturer's instructions.

Transfer pumps, pipes, fittings and valves will be inspected on a monthly basis for general condition and leaks to inform any maintenance required in addition to routine maintenance required under manufacturer's instructions. Key items of water management infrastructure that will be inspected and maintained in accordance with manufacturer's instructions are:

- Water treatment facility instrumentation (calibration and maintenance)
    - pH meter
    - turbidity meter
    - flow meter
    - chemical dosing pumps
- Tertiary Basin Pump
- In-Pit Pump
- Southern Void Pump

Inspection and maintenance requirements for erosion and sediment controls (including the Tertiary Basin) are provided in **Section 5.4**.

3.5 Surface Water Monitoring Program

3.5.1 Water Quality

Table 3.3 presents the water quality monitoring program that will be implemented in full when controlled discharges to Doughboy Hollow Creek are approved.

Table 3.3 Future Water Quality Monitoring Program

Location ID	Description	Frequency of Monitoring	Parameters	Units	Required Limit of Reading
SW1	In-Pit Sump	Monthly	pH EC TSS Turbidity O&G	- µS/cm mg/L NTU mg/L	0.01 10 5 1 5
SW2	Southern Void				
SW3	Tertiary Basin				
SW4	Rail Siding				
LDP1	Treated Water Discharge	Weekly during discharge	O&G	mg/L	5
		Monthly during discharge	pH EC TSS Turbidity	- µS/cm mg/L NTU	0.01 10 5 1
		Continuous during discharge	pH Turbidity[1]	- NTU	0.1 1
RW1	Doughboy Hollow Creek Upstream	Monthly and Monthly during discharge	pH EC TSS Turbidity O&G	- µS/cm mg/L NTU mg/L	0.01 10 5 1 5
RW2	Doughboy Hollow Creek Downstream				

Note:

[1] EPL1115 indicates that TSS is to be monitored continuously, however, direct continuous measurement of TSS is not possible. As such turbidity will be monitored as a proxy for TSS and a relationship between TSS and turbidity developed based on laboratory analysis of discharged water to enable indirect continuous monitoring of discharge TSS.

3.5.2 Water Quantity

Table 3.4 presents the water quantity monitoring program that will be implemented in full when controlled discharges to Doughboy Hollow Creek are approved.

Table 3.4 Future Water Quantity Monitoring Program

Parameter	Frequency	Methodology
Pit Sump Volume	Monthly	Staff gauge and stage storage curve
Southern Void Volume	Monthly	Survey
Southern Void transfer to In-Pit Sump	Monthly	Calculation based on pump run hours and pump rate
Pit Sump Transfers to Tertiary Basin	Continuous during transfer	Flume equipped with level transmitter

Parameter	Frequency	Methodology
Discharge Flow to Doughboy Hollow Creek	Continuous during discharge	Flow meter

3.6 Impact Assessment Criteria Exceedance Protocol

The following protocol will be implemented on a monthly basis following receipt of water quality monitoring results:

- Compare downstream Doughboy Hollow Creek Water downstream water quality results with the IAC presented in **Table 3.1**.
- If Doughboy Hollow Creek Water downstream water quality results are outside of the IAC range implement Receiving Water Quality Trigger Action Response Plan (TARP) in **Table 3.5**.
- If the investigations undertaken during TARP implementation **indicate the exceedance(s) is non-compliance** (refer to **Section 8.5**), notifications are to be made in accordance with **Section 8.1** and **Section 8.5**.
- If the investigations undertaken during TARP implementation indicate the exceedance(s) is an incident (refer to **Section 8.3**), notifications are to be made in accordance with **Section 8.1** and **Section 8.3**.
- If the investigations undertaken during TARP implementation **do not indicate a Quarry impact** the exceedance and investigation will to be reported in the Annual Review (refer to **Section 8.5**).

Table 3.5 Receiving Water Quality TARP

Trigger Level	Observation	Strategy for Mitigation	Monitoring	Monitoring Action	Response
Level 1	Doughboy Hollow Creek downstream water quality outside of baseline Level 1 trigger value range in **Table 3.1**	Reuse of water captured in WMS for operational demands to reduce off-site spills. Excess surface water from the WMS is treated in a sediment basin (the existing Tertiary Basin).	Site and receiving water monitoring for pH, EC, turbidity, TSS and O&G	Repeat water quality sampling and analysis if result is suspected of being in error and continue monitoring on a monthly basis.	Compare downstream result with corresponding upstream result and the historical range in upstream water quality results (refer to **Section 2.1.4**) If water quality results are not consistent with historical range in upstream water quality, investigate potential contributing factors including: • Determine whether any spills from the Quarry WMS occurred prior to or at the time of monitoring and compare with corresponding site water quality results • Review conditions at the time of monitoring (e.g. rainfall, sample collected from ponded water in stream) If based on the preliminary investigation outlined above a potential Quarry impact has been identified, engage a water quality specialist to undertake a preliminary investigation. If the water quality specialist's investigation indicates a Quarry impact, notifications are to be made in accordance with **Section 8.3**. Otherwise the exceedance and investigation is to be reported in the Annual Review (refer to **Section 8.5**).

Trigger Level	Observation	Strategy for Mitigation	Monitoring	Monitoring Action	Response
Level 2	Doughboy Hollow Creek downstream water quality outside of baseline Level 2 trigger value range (excluding O&G) in **Table 3.1**. Three consecutive Doughboy Hollow Creek downstream water quality outside of baseline trigger value range in **Table 3.1**	Reuse of water captured in WMS for operational demands to reduce off-site spills. Excess surface water from the WMS is treated in a sediment basin (the existing Tertiary Basin).	Site and receiving water monitoring for pH, EC, turbidity, TSS and O&G	Increase monitoring frequency to weekly until: • cause is identified; or • water quality results are confirmed not to be a result of Quarry operations; or • water quality results return to within the trigger value range.	Engage a water quality specialist to undertake a preliminary investigation. If the water quality specialist's investigation indicates a Quarry impact, notifications are to be made in accordance with **Section 8.3**. Otherwise the exceedance and investigation is to be reported in the Annual Review (refer to **Section 8.5**).

4.0 Water Balance

4.1 Model Overview

A daily time step reporting water balance model (the Model) has been developed for the Quarry WMS in the GoldSim software modelling platform. The Model utilises daily rainfall and evaporation data sourced from the SILO climate data base to estimate:

- gross water balance (excludes imports and controlled discharges)
- import water demands
- controlled discharge volumes and frequency
- spill volumes and frequency

Modelling has been undertaken for WMS at the existing pit extent and the maximum pit extent. Catchment runoff is calculated in the Model using the Australian Water Balance Model (AWBM) and daily rainfall and evaporation data sourced from the SILO climate data. The AWBM parameters for undisturbed catchment runoff have been calibrated to the Quarry site average annual regional runoff of 0.8 ML/ha/year (based on Water NSW Maximum Harvestable Rights Dam Capacity calculator) using SILO rainfall and evaporation data for the period January 1900 to December 2021.

Table 4.1 Catchment Types and AWBM Parameters

Catchment	Surface Store Area Split			Surface Store Capacities			BFI[1]	Kb[2]	Ks[2]	Evap%[4]
	A1	A2	A3	C1	C2	C3				
Undisturbed	0.134	0.433	0.433	11.2	114.3	228.6	0.22	0.991	0.5	100
Disturbed	0.185	0.430	0.385	2.7	38.4	85.7	0.05	0.985	0.0	85
Pit/Hardstand	0.185	0.430	0.385	0.6	9.2	20.6	0.05	0.985	0.0	85

Notes:

[1]Base flow index

[2] Baseflow recession constant

[3] Surface runoff recession constant

[4] Pan factor to potential evapotranspiration

4.1.1 Input Data

Input data to the water balance model are:

- SILO climate database daily rainfall and evaporation gridded data (grid point: -31.75° latitude, 150.80° longitude) from January 1900 to December 2020

- Operational water demand data presented in the *Ardglen Quarry Extension – Site Water Management Plan* (AECOM, 2017):
    - Processing Plant – 60 kL/day, 5 days per week
    - Truck Wheel Wash – 10 kL/day, 5 days per week
- Quarry catchment areas based on contours produced from 2011 and 2014 LiDAR data and design pit extension contours
- a Volume – Area stage storage relationship for the Southern Void developed using contours produced the 2014 LiDAR data
- a Volume – Area stage storage relationship for the Tertiary Basin developed using basin design contours
- groundwater inflows for the existing pit extent of 28.5 kL/day based on informal v-notch weir measurements undertaken by Daracon (to be confirmed once groundwater study complete)
- groundwater inflows for the maximum pit extent of 57.0 kL/day assuming groundwater inflows double with the significant increase in pit face area that has the potential to intercept groundwater (to be confirmed once groundwater study complete)

4.1.2 Assumptions

The following bases and assumptions were applied to the water balance model:

- water demands for haul road dust suppression has been estimated based on an evaporation – rainfall deficit, i.e.:
    - if rainfall exceeds evaporation then there is no dust suppression demand; or
    - if evaporation exceeds rainfall, the dust suppression demand is equal to evaporation minus rainfall
- the Tertiary Basin is dewatered at a maximum discharge rate of 20 L/s when the basin inventory exceeds 4.4 ML to ensure sufficient freeboard to accommodate a 5 day 95th percentile rainfall event (refer to **Section 5.1.2**)
- the In-Pit Sump is dewatered to the Tertiary Basin at a maximum discharge rate of 20 L/s from the tertiary when the sump inventory exceeds the maximum inventory to ensure sufficient freeboard to accommodate a 12 hour 5% AEP (refer to **Section 3.4**)
- the Southern Void is dewatered to the In-Pit Sump at a maximum discharge rate of 20 L/s from the tertiary when the Southern Void inventory exceeds the maximum inventory to ensure sufficient freeboard to accommodate a 12 hour 5% AEP (refer to **Section 3.4**)
- water is imported from the Tertiary Basin to the In-Pit Sump to supplement operational water demands when the In-Pit Sump has low water inventory
- a pan evaporation factor of 0.8

4.1.3 Model Results

Water balance modelling results presented in this section are based on the current understanding of the Quarry site (e.g. rainfall runoff response). The water balance will be updated on an annual basis to provide the outputs indicated in **Section 8.5** with ongoing water quantity monitoring (refer to **Section 3.5.2**) informing model inputs.

Table 4.2 presents the gross water balance results (excludes controlled discharges and potable water imports) for the existing and maximum pit extents.

Table 4.2 Gross Water Balance Results

Statistic	Existing Pit Extent Gross Water Balance (ML/year)	Maximum Pit Extent Gross Water Balance (ML/year)
Minimum	-24.6	-21.3
10th Percentile	0.0	10.9
50th Percentile	13.7	76.7
90th Percentile	52.2	141.7
Maximum	111.7	255.7

Table 4.4, **Table 4.4** and **Table 4.5** present the net water balance results for the modelled rainfall year closest to gross water balance 10th percentile, 50th percentile and 90th percentile predictions for the existing and maximum pit extents respectively.

Table 4.3 10th Percentile Net Water Balance Results

Parameter	Existing Pit Extent Result (ML/year)	Maximum Pit Extent Result (ML/year)
Inflows		
Rainfall and Runoff	29.1	55.8
Groundwater	10.4	20.8
Imports	0.0	0.0
Total Inflows	***39.5***	***76.6***
Outflows		
Evaporation	15.2	16.7
Watercart Dust Suppression	20.9	35.9
Material Processing and Wheel Wash	18.2	18.2
Tertiary Basin Spills	0.0	0.0
Controlled Discharges	0.0	10.7
Total Outflows	***54.4***	***81.6***
Change in Storage	-14.9	-5.0
Net Water Balance	**0.0**	**0.0**

Table 4.4 50th Percentile Net Water Balance Results

Parameter	Existing Pit Extent Result (ML/year)	Maximum Pit Extent Result (ML/year)
Inflows		
Rainfall and Runoff	60.8	142.1
Groundwater	10.4	20.8
Imports	0.0	0.0
Total Inflows	***71.2***	***162.9***
Outflows		
Evaporation	16.8	15.2
Watercart Dust Suppression	17.6	30.5
Material Processing and Wheel Wash	18.2	18.2
Tertiary Basin Spills	0.0	1.5
Controlled Discharges	13.7	76.5
Total Outflows	***66.4***	***142.1***
Change in Storage	4.8	20.8
Net Water Balance	**0.0**	**0.0**

Table 4.5 90th Percentile Net Water Balance Results

Parameter	Existing Pit Extent Result (ML/year)	Maximum Pit Extent Result (ML/year)
Inflows		
Rainfall and Runoff	103.9	210.7
Groundwater	10.4	20.8
Imports	0.0	0.0
Total Inflows	***114.3***	***231.5***
Outflows		
Evaporation	16.9	14.3
Watercart Dust Suppression	16.6	27.4
Material Processing and Wheel Wash	18.2	18.2
Tertiary Basin Spills	1.3	4.0
Controlled Discharges	51.9	141.7
Total Outflows	***105.0***	***205.7***
Change in Storage	9.3	25.8
Net Water Balance	**0.0**	**0.0**

Table 4.6 and Table **4.7** present the predicted Tertiary Basin controlled discharge volumes and frequencies respectively for the existing and maximum pit extents.

Table 4.6 Predicted Tertiary Basin Controlled Discharge Volumes

Statistic	Existing Pit Extent Discharge Volumes (ML/year)	Maximum Pit Extent Discharge Volumes (ML/year)
Minimum	0.0	0.0
10th Percentile	0.0	10.9
50th Percentile	14.6	76.7
90th Percentile	51.8	141.7
Maximum	111.7	255.7

Table 4.7 Predicted Tertiary Basin Controlled Discharge Frequency

Statistic	Existing Pit Extent Discharge Frequency (days/year)	Maximum Pit Extent Discharge Frequency (days/year)
Minimum	0	0
10th Percentile	0	37
50th Percentile	87	102
90th Percentile	162	177
Maximum	244	263

Table 4.8 and **Table 4.9** present the predicted Tertiary Basin spill volumes and frequencies respectively for the existing and maximum pit extents.

Table 4.8 Predicted Tertiary Basin Spill Volumes

Statistic	Existing Pit Extent Spill Volumes (ML/year)	Maximum Pit Extent Spill Volumes (ML/year)
Minimum	0.0	0.0
10th Percentile	0.0	0.0
50th Percentile	0.0	0.7
90th Percentile	3.8	15.0
Maximum	29.0	76.5

Table 4.9 Predicted Tertiary Basin Spill Frequency

Statistic	Existing Pit Extent Spill Frequency (events/year)	Maximum Pit Extent Spill Frequency (events/year)
Minimum	0	0
10th Percentile	0	0
50th Percentile	0	1
90th Percentile	1	4
Maximum	5	6

The water balance modelling results indicate:

- The Quarry will have adequate water to meet operational demands without water imports in all but the driest years for existing pit extent and maximum pit extent operational scenarios (refer to **Table 4.2**)
- Controlled discharges will be required for both the existing pit extent and maximum pit extent operational scenarios with a greater frequency of discharge for the extended Quarry Pit catchment due to the significant increase in surface water runoff to the In-Pit Sump (refer to **Table 4.7**)

- Spills from the WMS are predicted for both the existing pit extent and maximum pit extent operational scenarios with a greater frequency of spills for the extended Quarry Pit catchment due to the significant increase in surface water runoff to the In-Pit Sump (refer to **Table 4.9**). Spills will occur during high or prolonged rainfall events when the design water storage capacity and/or water treatment and discharge capacity is exceeded

During extended dry periods when inflows to the Quarry WMS are not sufficient to meet operation demands, Daracon will implement the following measures as required:

- Prioritise water usage for environmental controls (i.e. dust suppression)
- Import water (tanker or source additional surface water or groundwater share entitlement)
- Limit resource extraction and material processing to ensure water is available for environmental controls (i.e. dust suppression)

The water balance model will be updated following 12 months of groundwater monitoring and ongoing surface water inventory monitoring when improved estimates of groundwater inflows to the Quarry pit are available. Ongoing surface water quantity monitoring will also allow further calibration of the AWBM runoff parameters (refer to **Table 4.1**).

5.0 Erosion and Sediment Control Plan

The following activities undertaken at the Quarry have the potential to cause erosion and generate sediment:

- clearing and topsoil stripping ahead of mining operations
- extractive operations, noting that the areas of extraction are internally draining
- stockpiling and handling of extracted materials, imported materials and products
- construction of overburden emplacement areas (i.e. placement of overburden)
- rainfall/runoff on active work areas and overburden areas

The design standard for drainage, erosion and sediment control (DESC) measures and the typical DESC measures that will be applied on-site to minimise the potential for erosion and sedimentation impacts on and off-site are described in the following sections. This Erosion and Sediment Control Plan has been prepared in accordance with the Consent and general accordance with the requirements of *Managing Urban Stormwater Soils and Construction Volume 1* (Landcom, 2004) and *Volume 2e Mines and quarries* (DECC, 2008) (hereafter referred to as the 'Blue Book').

5.1 Drainage, Erosion and Sediment Control Design Standard

5.1.1 Drainage Controls

The 'Blue Book' requires that drains are designed to be non-scouring for a specified storm event based on the duration of soil disturbance and the sensitivity of the receiving environment. The drainage control design standard at the Quarry site for a sensitive receiving environment are presented in Table 5.2.

Table 5.1 Drainage Control Design Standard

Disturbance Duration	Design Standard[1]
< 6 months	5 year ARI
6-12 months	10 year ARI
>1 year	20 year ARI

Note: [1] Designed to be non-scouring in the listed design Average Recurrence Interval (ARI) storm event

5.1.2 Erosion Controls

An erosion hazard assessment has been undertaken in accordance with Chapter 4.4.1 of Volume 1 of the 'Blue Book'. The R-factor (rainfall erosivity) for the site was calculated using Equation (2) in Appendix A of Volume 1 of the 'Blue Book':

$$R = 164.74 \times 1.1177^{S} \times S^{0.6444}$$

where

S	**Is the 2 year 6 hour duration storm event intensity (refer to** Table 2.3**)**	**7.95 mm/h**

$$R = 164.74 \times 1.1177^{7.95} \times 7.95^{0.6444}$$

$$\boldsymbol{R = 1,518}$$

Plotting the extension area site slope, estimated to be on average approximately 13% from Project site contours, and R-factor on Figure 4.6 from Volume 1 of the 'Blue Book' determines whether the site has a high or low erosion hazard. **Figure 5.1** presents the erosion hazard assessment plot which demonstrates that the site has a low erosion hazard. As such, enhanced erosion control measures are not required.

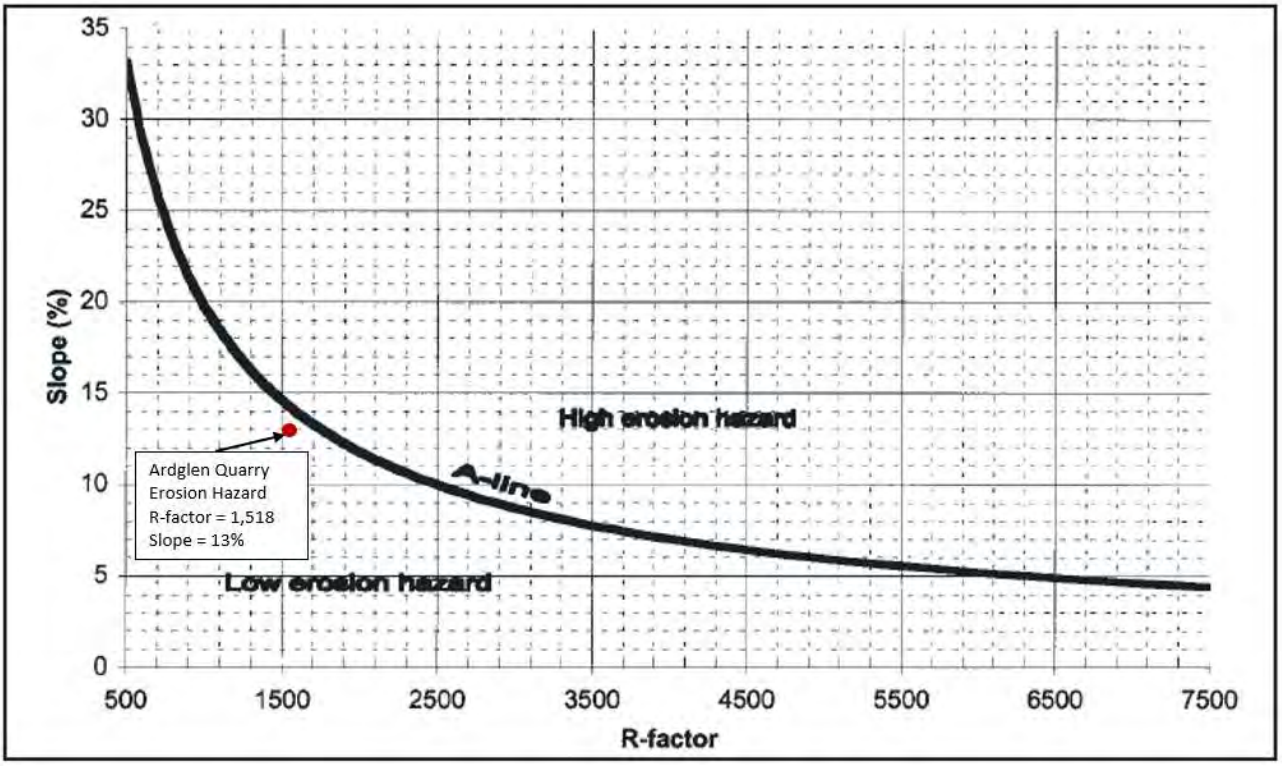

Figure 5.1 Erosion Hazard Assessment

5.1.3 Sediment Controls

The 'Blue Book' requires that sediment basins are used when the soil loss rate exceeds 200 T/year for the total area to be disturbed. The soil loss rate is estimated using the Revised Universal Soil Loss Equation (RUSLE) and Table 4.2 of Volume 1 of the 'Blue Book'. The annual Project site soil loss has been estimated using RUSLE as follows:

$$A = R \times k \times LS \times C \times P$$

where

A	is the annual soil loss rate	to be calculated	tonnes/ha/year
R	is the annual average rainfall erosivity calculated based on the 2 year, 6 hour duration ARI storm event intensity (refer to **Section 5.1.2**)	1,518	-
k	is the soil erodibility (refer to Table 2.1)	0.06	-
LS	is the slope length gradient factor sourced from Table A1 of *Managing Urban Stormwater Volume 1* (Landcom, 2004) and is dependent on the maximum slope length (use 80 m) and average site slope (13%)	4.16	-
C	is the ground cover factor sourced from Figure A5 of *Managing Urban Stormwater Volume 1* (Landcom, 2004) (no ground cover in this case)	1.0	-
P	is the erosion control practise factor sourced from Table A2 of *Managing Urban Stormwater Volume 1* (Landcom, 2004) and is dependent on level of compaction and roughness of the disturbed surface (assume Compacted and smooth)	1.3	-

$$\mathrm{A} = 1{,}518 \times 0.06 \times 4.16 \times 1.0 \times 1.3$$

$$\mathbf{A} = \mathbf{96.5}\,\frac{\boldsymbol{tonnes}}{\boldsymbol{ha.year}}$$

Based on the estimated soil loss rate of 96.5 tonnes/ha/year estimated the Quarry disturbance area would need to be less than approximately 2 ha to not require sediment basins. As such, runoff from externally draining disturbed catchments with areas greater than 2 ha will require management in sediment basins.

The 'Blue Book' requires that sediment basins are designed based on the duration of soil disturbance, soil type and sensitivity of the receiving environment. Temporary sediment controls are required to be designed to be structurally sound for a specified storm event based on the duration of soil disturbance and the sensitivity of the receiving environment. The sediment control design standard for sediment controls at the Quarry site for a sensitive receiving environment are presented in **Table 5.2**.

Table 5.2 Sediment Control Design Standard

Disturbance Duration	Soil Type	Sediment Basin Storm Event to be Contained[1,2]	Sediment Basin Embankment & Spillways[3]	Temporary Sediment Controls[3]
< 6 months	F	5 day 80th percentile	20 year ARI	5 year ARI
6-12 Months	F	5 day 85th percentile	50 year ARI	10 year ARI
1-3 years	F	5 day 85th percentile	100 year ARI	20 year ARI
>3 years	F	5 day 95th percentile	100 year ARI	20 year ARI

Notes:

[1] Designed to achieve required water quality up to the nominated storm event;

[2] Sediment storage zone shall be sized to accommodate a minimum of two months soil loss as calculated with the RUSLE;

[3] Designed to be structurally sound in the listed design storm event

The relevant five day design rainfall depths for the Quarry site are those for Scone published in the 'Blue Book' (Landcom, 2004) and are presented in **Table 5.3**.

Table 5.3 Design Rainfall Depths

Event	Rainfall Depth (mm)
5 day 80th percentile	22.6
5 day 85th percentile	27.7
5 day 95th percentile	51.3

The 7.7 ML Tertiary Basin inventory will be managed to accommodate runoff from its immediate catchment (approximately 5.7 ha) for a five day 95th percentile rainfall event as presented in **Table 5.4**.

Table 5.4 Tertiary Basin Inventory Management

Parameter	Volume (ML)
5 day 95th percentile runoff volume	2.2
12 months sediment storage	1.1

Within five days of runoff generating rainfall or dewatering of the In-Pit Sump via the Tertiary Basin, the Tertiary Basin will be dewatered to ensure there is at least 2.2 ML of freeboard below the spillway invert (i.e. the Tertiary Basin will be managed to have a target maximum inventory of 5.5 ML). A fixed staff gauge will be installed in the Tertiary Basin indicating the minimum freeboard requirement and the need for dewatering for levels above the minimum freeboard requirement.

5.2 Drainage Erosion and Sediment Controls

5.2.1 General Conditions

All ESCs are to be installed, managed and maintained in accordance with the 'Blue Book' (Landcom, 2004) to:

- Prevent sediment moving off-site and sediment laden water entering any watercourse, drainage line, or drain inlet.
- Reduce water velocity and capture sediment on site.
- Minimise the amount of material transported from site to surrounding pavement surfaces.
- Divert clean water around site.

Additional ESC measures must be implemented and a revised in the event that site conditions change significantly, or the implemented controls fail to achieve the desired objective of preventing environmental harm.

The three primary DESCs that will be implemented at the Quarry are:

- a clean water diversion drain upslope of the western pit extension
- an in-pit sump to capture dirty water runoff from the extraction area catchment
- a sediment basin to capture runoff from the Quarry infrastructure area and receive surplus water from the in-pit sump for treatment (to remove suspended solids) and reuse or discharge (subject to EPL variation).

These location and function of these controls are detailed in **Section 3.1**. Other DESCs will be planned, designed and implemented in accordance with the 'Blue Book' where ground disturbing activities occur outside of the primary DESCs described above.

5.2.2 General Site Management

1. No ground disturbance (other than disturbance for the installation of required DESCs) is to occur until the ESCs required are installed and functional.
2. To minimise ground disturbance, activities including vehicle and machinery movements and stockpiling, will be restricted to designated work areas where possible.
3. All fuels, chemicals and liquids are to be stored in an impervious bunded area, a minimum of 50 m away from:
    - rivers, creeks or any areas of concentrated water flow
    - flooded or poorly drained areas.
    - slopes above 10%.

4. Refuelling of plant and equipment that can readily be relocated shall be undertaken remotely from waterfront land. For plant and equipment that requires refuelling on waterfront land appropriate controls are to be implemented including:
    - Placement of filter socks around area that could potentially be impacted by fuel spills.
    - Ensuring spill kits are present during refuelling.
    - Ensuring an appropriate number of trained personnel are available during refuelling to monitor for spills and respond rapidly to contain a spill.
5. Emergency spill kits are to be kept on site at all times. All workers are to be made aware of the location of the spill kits and trained in their use.
6. Ensure a suitable stock of consumable erosion and sediment control products (e.g. geotextile, sediment fence) is available on site to ensure repairs to ESCs can be made promptly and temporary stabilisation measures can be implemented under wet weather provisions.

5.2.3 Soil and Stockpile Management

7. Topsoil should be stripped while in a moist condition to maintain soil structure. If the soil is too dry the soil will be pulverised, if the soil is too wet it may lead to clodding and hardsetting.
8. Avoid mixing topsoil with subsoil during stripping and stockpiling.
9. Topsoil should be preserved on site for reuse during the site stabilisation stage.
10. If possible topsoil is to be stockpiled at heights no greater than 2 m to assist in maintaining seed viability and avoid compaction of topsoil stockpiles to maintain soil structure.
11. Topsoil should ideally be reapplied within 12 months of stripping and as such, the implementation progressive site rehabilitation is of significant importance to successful revegetation.
12. Soils shall be removed from stockpiles in a manner that avoids mobile plant traffic on the stockpile and soils shall be re-spread in the reverse sequence to its removal, i.e. subsoil replaced prior to topsoil replacement.
13. Where practicable stockpiles are to have sediment fencing installed on the downslope side and a clean water diversion bund installed on the upslope side as in accordance with 'Blue Book' standard drawing *SD4-1 Stockpiles* (refer to **Appendix B**) to protect from run-on water.
14. Where soil material is suspected of contamination it will be classified in accordance with the *NSW Environment Protection Authority (EPA) Waste Classification Guidelines Part 1: Classifying Waste* prior to disposal or emplacement. Contaminated material is to be disposed of at an appropriately licensed waste management facility.

5.2.4 Drainage and Erosion Controls

15. Wherever reasonable and practicable, "clean" surface waters must be diverted away from sediment control devices and any untreated, sediment-laden waters.

16. Minimise disturbance and retain as much existing ground cover as practicable. Disturbance boundaries are to be clearly delineated with construction fencing or barrier tape.

17. Disturbed slopes subject to sheet flow are to be limited to a maximum length of 80 m.

18. When utilising rolled erosion control products (RECPs) for stabilisation, they shall be installed in accordance with 'Blue Book' standard drawing *SD 5-2 RECP: Sheet Flow* for areas subject to sheet flow and *SD 5-7 RECP Concentrated Flow* for areas subject to concentrated flow.

5.2.5 Sediment Controls

19. All runoff from disturbed areas is to be passed through a sediment control.

20. Sediment traps should be located as close to the source of the sediment as practicable.

21. Sediment removed from any trapping device is to be disposed of in locations where further erosion and consequent pollution to downslope lands and waterways will not occur.

22. Temporary soil and water management structures are to be removed only after the disturbed area is stabilised appropriately in accordance with the requirements the 'Blue Book' (Landcom, 2004).

23. Sediment control devices must be de-silted and made fully operational as soon as reasonable and practicable after a sediment-producing event.

24. Materials, whether liquid or solid, removed from sediment control devices during maintenance or decommissioning, must be disposed of in a manner that does not cause ongoing soil erosion or environmental harm.

5.3 Works on Waterfront Land

Any works on waterfront land (i.e. works within 40 m of the top of bank of a waterway as defined by DPIE Water at *https://www.industry.nsw.gov.au/water/licensing-trade/approvals/controlled-activities/what-is-a-controlled-activity*) or within Doughboy Hollow Creek will be undertaken in accordance with Guidelines for Controlled Activities on Waterfront Land (2018) and in consultation with DPIE Water. The typical controls for works on waterfront land or within Doughboy Hollow creek include:

25. Detailed site and works specific progressive ESCPs are to be prepared for all works in waters and on waterfront land.

26. Works on waterfront land should be undertaken during periods of low rainfall erosivity wherever practicable.

27. Where scheduling of works on waterfront land during low rainfall erosivity is not possible or is impractical, erosion control measures should be implemented to ensure disturbed lands only have c-factors in excess of 0.1 (i.e. approximately 60% ground cover) when the three day forecast indicates that rain is unlikely. Management regimes should be established to ensure that the site can be stabilised (i.e. c-factor 0.1 or less) within 24 hours if the forecast is incorrect.

28. Geotextile fabric is to be used to isolate the natural bed of the waterway from the fill or other material used to create any work platform within the bed of the waterway.

29. When working near riparian vegetation or waterfront land these areas need to be identified and appropriately delineated as “No Go” areas (with the aim of avoiding harm to these areas). Harm to riparian vegetation or waterfront land outside of the approved disturbance boundary is not permitted and any harm caused is to be documented and any harm caused is to be restored in accordance with directions provided by DPIE Water.

30. Material storage and stockpiling is not to be undertaken on waterfront land or riparian vegetation. Stockpiling must be undertaken in a manner to avoid harm to these types of vegetation or water land. Stockpiles should also be located 10 metres away from adjacent waterfront land. Stockpiles are to be managed as detailed in **Section 5.2.3**.

31. On completion of the works the site is to be rehabilitated and stabilised in accordance with the draft Ardglen Quarry Landscape Management Plan (Umwelt, 2020).

5.4 Inspection and Maintenance

5.4.1 Inspection and Monitoring

32. Regular inspections are to be undertaken by personnel with:

    a. an understanding of the local environmental values that could be impacted by the works;

    b. a good working knowledge of the Project ESCs; and

    c. training in the correct installation, operational and maintenance requirements for the Project ESCs.

33. All ESCs are to be inspected:

    a. daily for works on waterfront land

    b. weekly for all other areas

    c. prior to forecasted rainfall events greater than or equal to 20 mm in a 24-hour period

    d. after rainfall events greater than or equal to 20 mm in a 24-hour period or runoff generating rainfall.

34. All inspections are to be documented on inspection checklists and all actions identified are to be closed out within a reasonable and practical time frame. The Inspection checklist is to include:

    a. recording the condition of every erosion and sediment control employed including any evidence of scouring in drains and the condition of sediment basin walls and spillway

    b. recording maintenance requirements (if any) for each erosion and sediment control

    c. recording the volumes of sediment stored in and removed from sediment retention systems, including all three cells of the Tertiary Basin , where applicable

    d. recording the site where the sediment is disposed

5.4.2 Maintenance

No fixed maintenance schedule for erosion and sediment controls is proposed. The routine inspections indicated in Section 5.4.1 will inform the need for maintenance which will be undertaken on an as needs basis.

All ESCs, including drainage control measures, must be maintained in proper working order at all times during their operational lives. All ESCs shall be maintained in a functioning condition during construction until all ground disturbance activities are completed, and full stabilisation of the site is achieved.

Sediment removal from the Tertiary Basin is expected to be required annually, however, routine monitoring will indicate the requirement for more frequent sediment removal to ensure adequate basin capacity is maintained to accommodate runoff from design rainfall events and maintain water treatment efficiency. Sediment removed from sediment traps and places of sediment deposition must be disposed of in a lawful manner that does not cause ongoing soil erosion or environmental harm.

Required repairs to all controls are to be undertaken immediately where practical. Ensure controls are put back in place if they are moved for any reason (e.g. to mobile equipment access).

6.0 Dewatering Management Plan

Dewatering of the In-Pit Sump will be undertaken to maintain sufficient freeboard to accommodate the 12 hour 5% AEP and periodically when the capacity of the sump is to be increased to service the increasing extraction area catchment. The Southern Void will be dewatered to maintain sufficient freeboard to accommodate the 12 hour 5% AEP. Dewatering will be undertaken as follows:

- Water inventory monitoring indicates In-Pit Sump and/or Southern Void are approaching (within 10%) maximum inventory (i.e. the inventory that allows containment of runoff from the 12 hour 5% AEP, refer to **Table 3.2**)
- The quarry manager will to check forecast to determine whether significant rainfall, i.e. > 70 mm (noting that the In-Pit Sump and Southern Void will be managed with sufficient freeboard to accommodate runoff from 12 hour 5% AEP which is equivalent to 95 mm of rainfall) is predicted in the next seven days
- If significant rainfall is predicted, commence planning to dewater the In-Pit Sump and/or the Southern Void:
    - Check levels in Tertiary Basin
    - Check water treatment chemical stocks are adequate to treat the anticipated volumes to be dewatered (including dewatering of the runoff captured in the Tertiary Basin from the forecast rainfall)
    - Check water treatment equipment (dosing pumps, discharge pump, pH meters) are in proper working order
- If dewatering is required (i.e. In-Pit Sump and/or Southern Void inventories are approaching (within 10%) the maximum inventory), dewater the In-Pit Sump prior to dewatering the Southern Void as the infilling of the Southern Void is likely to result in higher suspended solids concentrations in runoff reporting to the void. The delay in dewatering of the Southern Void will provide additional settling time and reduce sediment loads dewatered to the In-Pit Sump.
- Dewatering of the In-Pit Sump to the Tertiary Basin will occur using the infrastructure and approach as described in **Section 3.4**.
- Following rainfall, dewater storages to restore minimum freeboard requirements as soon as practicable.

No infilling of the Southern Void is to be undertaken until the Dewatering Management Plan has been approved by the Planning Secretary. Dewatering of the Southern Void will be undertaken using a mobile pump and lay flat hose. Monitoring of water transfers, discharges and water quality associated with dewatering is captured in the surface water monitoring program detailed in **Section 3.5**.

7.0 Groundwater Monitoring Program

Condition 23B of Schedule 3 of the Consent (refer to **Table 1.2**) requires that a Groundwater Monitoring Program be prepared and submitted to the Planning Secretary for approval within 12 months of commencing quarrying operations in the extension area.

Daracon have installed the monitoring bore required under Condition 18E of Schedule 3 of the Consent (Refer to **Table 1.2**) as well as three additional bores with an initial monitoring groundwater program to collect at least 12 months of data and inform the ongoing Groundwater Monitoring Program. **Appendix C** contains a letter report (*Ardglen Quarry Desktop Review and Bore Plan*, Umwelt, 2021) detailing the proposed monitoring bore installations, initial groundwater monitoring program and consultation undertaken to date with DPE Water. The four proposed bores (including P3 bore) were installed and registered as of 26 November 2021.

Figure 7.1 below provides additional information regarding the groundwater monitoring Bore P3 that satisfies the requirements of Condition 18E of the Consent.

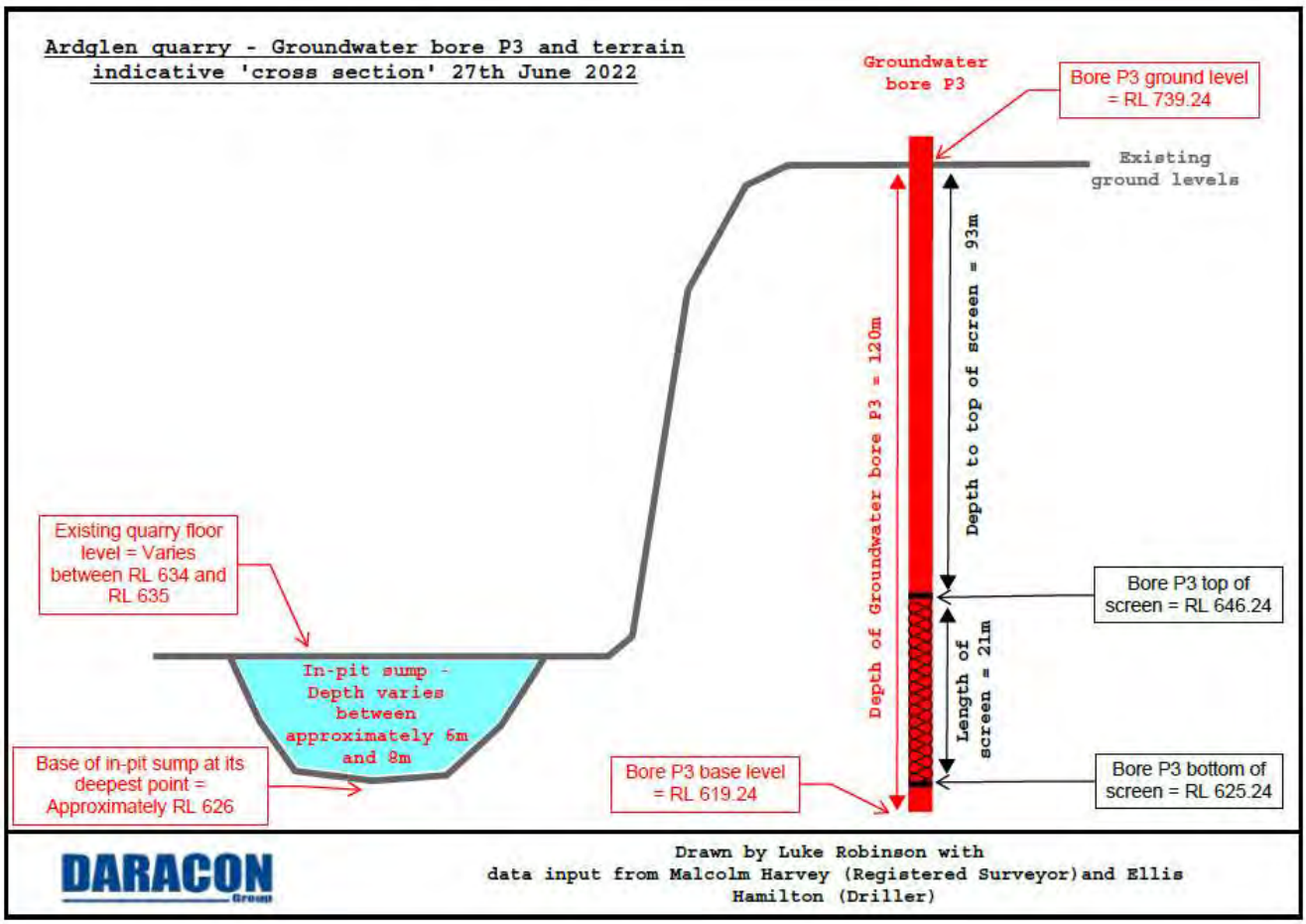

Figure 7.1 Groundwater Bore P3 specific details

This SWMP will be updated to include the Groundwater Monitoring Program within 12 months of commencement of quarrying in the extension area in accordance with the consent.

Additionally, and subject to the findings of the ongoing Groundwater Study, the need for a Water Access Licence to cover any interception of groundwater will be determined and obtained if necessary.

8.0 Reporting

8.1 Notification of Landowners

If the results of water quality monitoring (refer to **Section 3.5.1**) identify that the Quarry is responsible for exceedance of the IAC (refer to **Section 3.3**), Daracon will notify the Planning Secretary and any affected landowners and/or existing or future tenants (including tenants of quarry owned properties), and provide monitoring results to each of these parties until the results show that the Quarry is complying with the relevant IAC.

8.2 Independent Review

If a landowner (excluding Quarry owned properties) considers that Quarry operations are exceeding the IAC (refer to **Section 3.6**) and requests an independent review, and the Planning Secretary is satisfied that an independent review is warranted, within 3 months, or as otherwise agreed by the Planning Secretary and the landowner, of the Planning Secretary's decision, Daracon will:

- commission a suitably qualified, experienced and independent person (approved by the Planning Secretary) to:
    - consult with the landowner to determine their concerns;
    - conduct monitoring to determine whether the Quarry is complying with the relevant IAC; and
    - if the Quarry is not complying with the IAC, identify measures to restore compliance.
- give the Planning Secretary and landowner a copy of the independent review; and
- comply with any written requests made by the Planning Secretary to implement any findings of the review.

If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.

8.3 Incidents

Where an incident relating to water management has occurred, Daracon will immediately notify the Department in writing to compliance@planning.nsw.gov.au and any other relevant agencies of any incident.

The notification will identify the development as **Ardglen Quarry (Application Number: 06_0264**) and set out the location and nature of the incident.

An incident is defined in the Definitions of the Consent as:

An occurrence or set of circumstances that causes or threatens to cause material harm which may or may not be or cause a non-compliance.

8.4 Non-Compliances

Within seven days of becoming aware of a non-compliance relating to water management, Daracon will notify the Department in writing to compliance@planning.nsw.gov.au of the non-compliance.

The notification will identify the development as **Ardglen Quarry (Application Number: 06_0264**) and set out:

- the condition of this Consent that the development is non-complaint with;
- why the development does not comply with the condition;
- if known, the reasons for the non-compliance; and
- what actions have been, or will be, undertaken to address the non-compliance.

A non-compliance is defined in the Definitions of the Consent as:

An occurrence, set of circumstances or development that is a breach of this consent.

8.5 Annual Review

By the end of March in each year after the granting of the development consent, or other timeframe agreed by the Planning Secretary, Daracon are required to submit a report to DPE reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. The following content relating to water management is to be provided in the Annual Review:

- a description of the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current financial/calendar year
- a comprehensive review of surface water and groundwater monitoring results for the previous calendar year and comparison of results with:
    - relevant IAC;
    - relevant limit conditions in the site EPL (limit conditions to be determined as part of EPL variation process);
    - historical monitoring results from previous years including the identification of trends in monitoring data over the life of the Project; and
    - water balance predictions;
- a site water balance outlining water source inflows, operational water demands, Quarry water inventory changes and licenced discharges;
- details of any complaints received in relation to surface water or groundwater;

- details of any water related non-compliance or incident which occurred in the previous calendar year, and a description of the actions that were (or are) being taken to rectify the non-compliance and avoid reoccurrence;
- an evaluation of compliance with the IAC and water related operating conditions of this consent;
- evaluation of any discrepancies between the predicted and actual water related impacts of the Project, and analysis of the potential cause of any significant discrepancies; and
- a description of any measures to be implemented over the next calendar year to improve the water management performance of the Project.

8.6 Independent Environmental Audit

Prior to 31 December 2012, and every 5 years thereafter, unless the Planning Secretary directs otherwise, Daracon will commission and pay the full cost of an Independent Environmental Audit (IEA) of the Quarry. This audit will:

- be led by a suitably qualified, experienced and independent auditor whose appointment has been endorsed by the Planning Secretary;
- be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Planning Secretary) whose appointment has been endorsed by the Planning Secretary;
- be carried out in consultation with the relevant agencies and the CCC;
- assess the environmental performance of the development and whether it is complying with the relevant requirements in the Consent, water licences and mining leases for the development (including any assessment, strategy, plan or program required under these approvals);
- review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and the Consent;
- recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the abovementioned approvals and the Consent; and
- be conducted and reported to the satisfaction of the Planning Secretary.
- Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, Daracon must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.

8.7 Access to Information

Within 3 months of the approval of the SWMP (or any subsequent revision of this SWMP), or the completion of the audits or Annual Reviews required under the Consent, Daracon will:

- provide a copy of the relevant document/s to the relevant agencies and CCC; and
- put a copy of the relevant document/s on its website.

During the development, Daracon will:

- include a copy of the Consent, as may be modified from time to time, on the website;
- provide a full summary of monitoring results required under the Consent on the website; and
- update these results on a regular basis (at least every 6 months).

9.0 Plan Review and Update

The suitability of this SWMP will be reviewed within three months of:

e. the submission of an incident report under condition 3 of Schedule 5;

f. the submission of an Annual Review under condition 4 of Schedule 5;

g. the submission of an Independent Environmental Audit under condition 5 of Schedule 5;

h. the approval of any modification of the conditions of Consent (unless the conditions require otherwise),

i. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the SWMP will be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review.

10.0 References

Ardglen Quarry Desktop Review and Bore Plan, Umwelt, 2021

Ardglen Quarry Extension – Site Water Management Plan, AECOM, 2017

Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, Canberra, 2018

Managing Urban Stormwater – Soils and Construction Volume 1, Landcom, 2004

Managing Urban Stormwater – Soils and Construction Volume 2e Mines and Quarries, Department of Environment and Climate Change, 2008

Best Practice Erosion and Sediment Control, International Erosion Control Association (Australasia), 2008

APPENDIX A

Water Treatment and Discharge System

DRAWN: R.DIERCKE DESIGNED: R.DIERCKE JOB MANAGER: D.JARVIS VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR INFORMATION	RD		DJ	25.09.15

CLIENT: DARACON

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PLANS 1:500 0 5 10 15 20 25m

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Email newcastle@northrop.com.au ABN 81 094 433 100

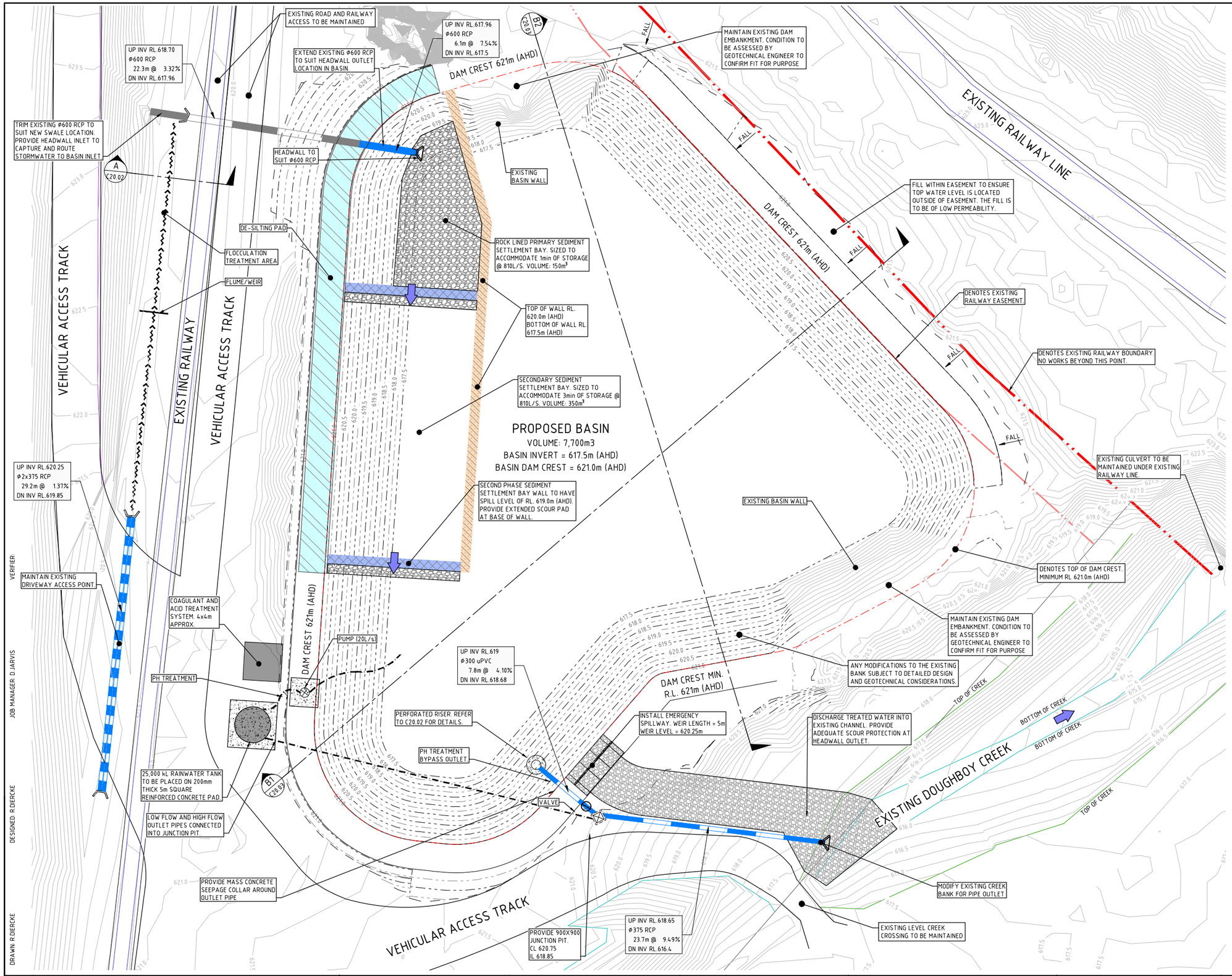
PROJECT: ARDGLEN QUARRY

DRAWING TITLE: SITE PLAN SWALE - SETOUT

JOB NUMBER: NL140154

DRAWING NUMBER: C101 REVISION: 1

DRAWING SHEET SIZE = A1



LEGEND

- DENOTES EXISTING RAILWAY BOUNDARY
- DENOTES EXISTING SITE BOUNDARY
- DENOTES RAILWAY EASEMENT LINE
- DENOTES EXISTING (LIDAR) CONTOURS @ 0.25m INTERVALS
- DENOTES PROPOSED DESIGN CONTOURS @ 0.25m INTERVALS
- DENOTES PAD FOR DE-SILTING EXCAVATOR
- DENOTES ROCK GABION PERMEABLE WALL. REFER TO SHEET C20.02 FOR DETAILS
- DENOTES ROCK GABION IMPERMEABLE WALL. REFER TO SHEET C20.02 FOR DETAILS.
- RIP RAP ENERGY DISSIPATER
- FLOW DIRECTION
- FALL — DIRECTION OF GRADE
- PROPOSED PERFORATED RISER
- PROPOSED 900x900 STORMWATER JUNCTION PIT WITH SEALED LID.
- PROPOSED STORMWATER PIPE
- EXISTING STORMWATER PIPE
- DENOTES LOW FLOW AND HIGHFLOW RAINWATER TANK OUTLET PIPES
- DENOTES PROPOSED SWALE

NOTE: WATER QUALITY TREATMENT DEVICES SHOWN ARE BASED ON REPORT BY VICTORY ENGINEERING DATED 18/11/2015 AND ARE SUBJECT TO CHANGE.

VERIFIER:
JOB MANAGER: D.JARVIS
DESIGNED: R.DIERCKE
DRAWN: R.DIERCKE

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PROJECT: ARDGLEN QUARRY ARDGLEN, N.S.W. 2338

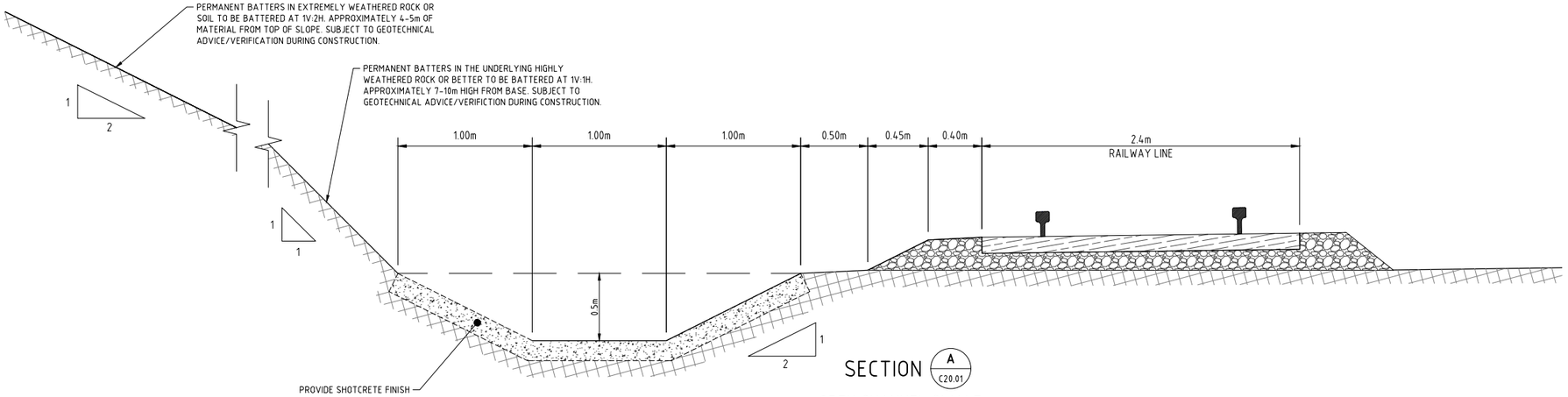
DRAWING TITLE: BASIN DETAIL PLAN TERTIARY BASIN

JOB NUMBER: NL140154

DRAWING NUMBER: C20.01

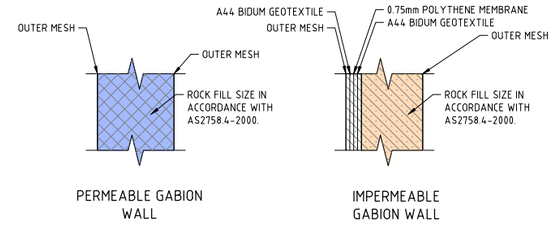
REVISION: A

DRAWING SHEET SIZE = A1

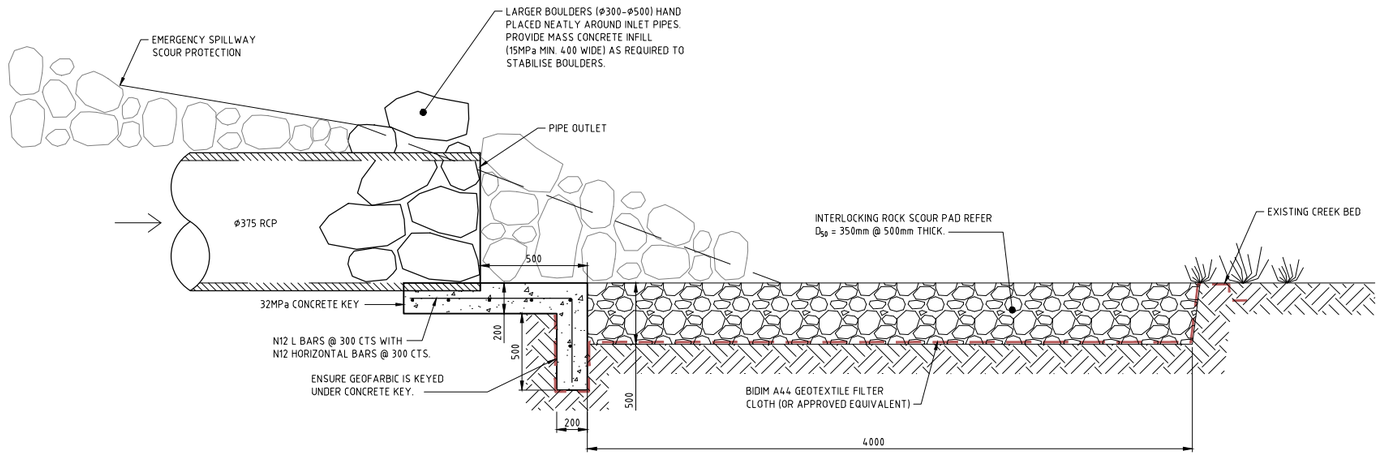


SECTION A / C20.01

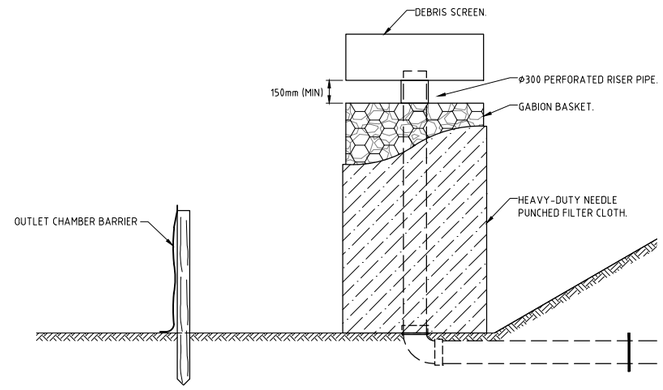
OPEN CHANNEL SWALE



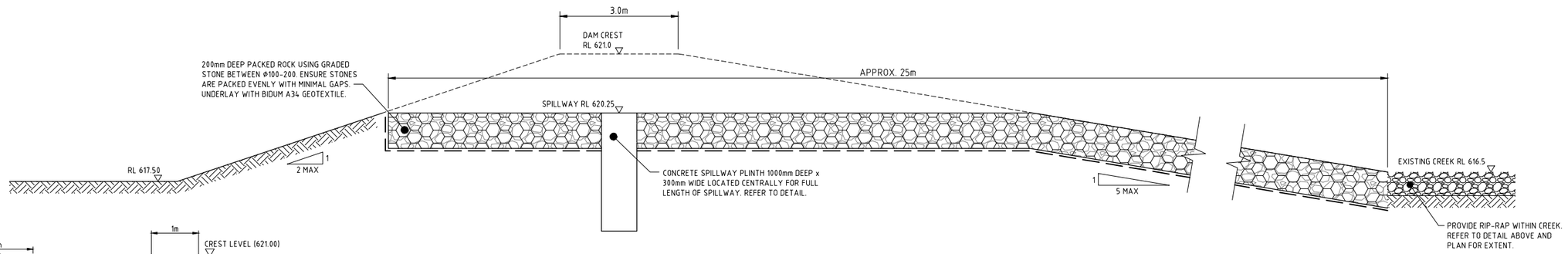
GABION WALL DETAIL



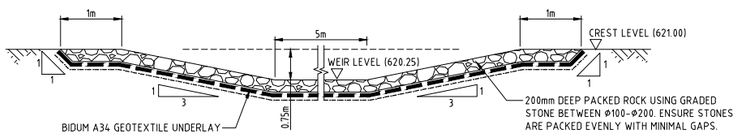
OUTLET PIPE INTERLOCKING ROCK SCOUR PAD
(ENERGY DISSIPATER)



RISER PIPE OUTLET
DETAIL (TYPICAL)



EMERGENCY SPILLWAY SECTION



EMERGENCY SPILLWAY DETAIL

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PROJECT: ARDGLEN QUARRY
ARDGLEN, N.S.W. 2338

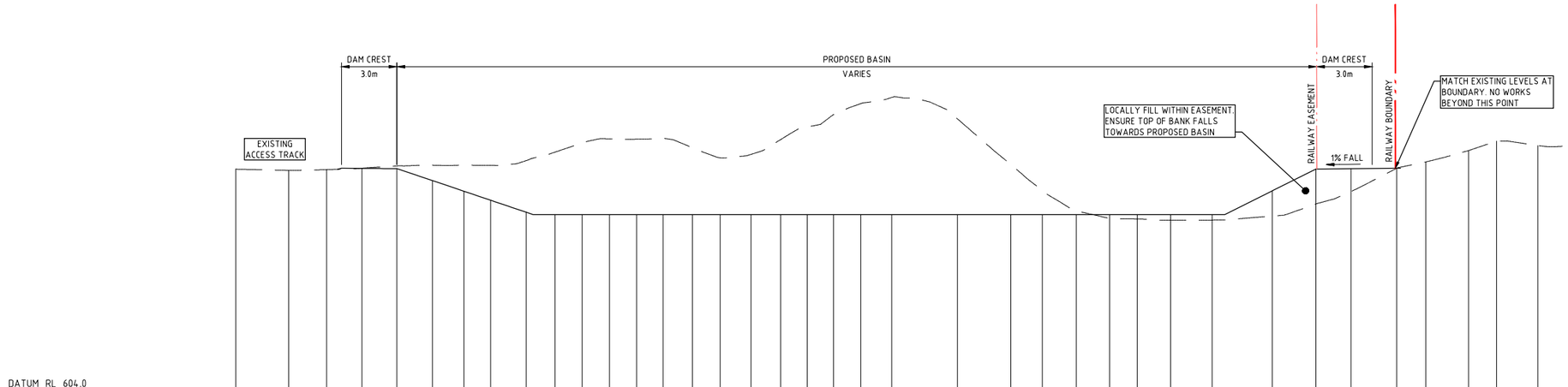
DRAWING TITLE: TYPICAL CROSS SECTION AND STORMWATER DETAILS TERTIARY BASIN

JOB NUMBER: NL140154

DRAWING NUMBER: C20.02

REVISION: A

DRAWING SHEET SIZE = A1

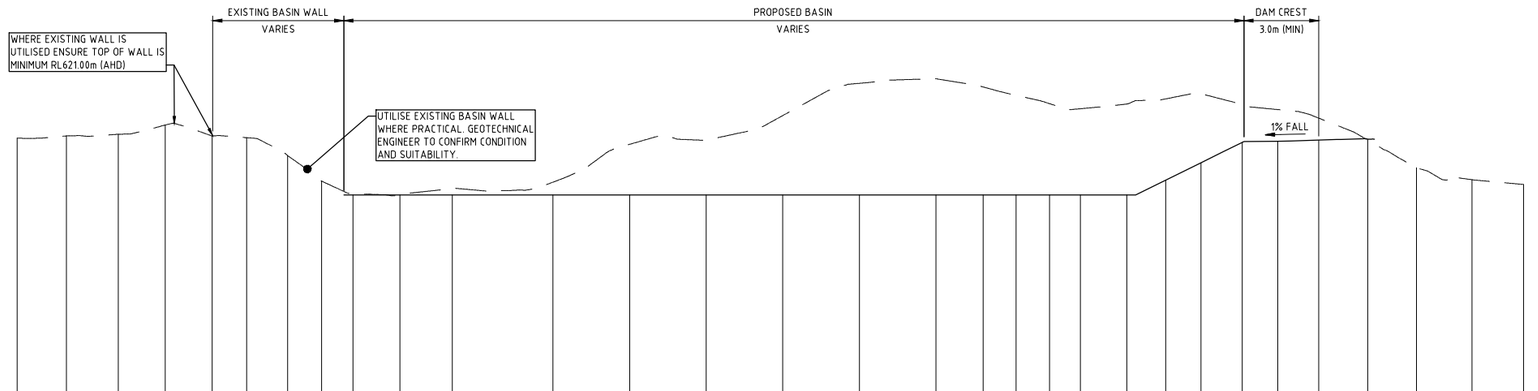


DATUM RL 604.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
0		620.959
4.035		620.867
6.929		620.924
9.624	621.018	621.036
12.293	621	621.208
15	620.086	621.262
17.402	619.275	621.269
19.426	618.592	621.248
22.138	617.676	621.612
24.335	617.5	622.258
26.409	617.5	622.989
28.483	617.5	623.269
30.557	617.5	623.246
32.573	617.5	623.311
34.808	617.5	622.597
36.92	617.5	621.826
39.273	617.5	622.086
41.521	617.5	623.209
43.553	617.5	624.172
45.555	617.5	625.122
47.647	617.5	625.962
50	617.5	626.429
55	617.5	624.803
59.072	617.5	621.322
61.474	617.5	619.337
64.066	617.5	617.774
66.606	617.5	617.196
68.706	617.5	617.16
71.253	617.5	617.069
74.406	617.5	617.078
78.995	619.309	617.38
82.317	620.97	618.303
85	620.997	619.26
88.486	621.032	621.031
90.698		621.51
93.956		622.377
96.089		623.094
99.242		622.756

LONGITUDINAL SECTION ALONG B1

HORIZONTAL SCALE 1:200@A1
VERTICAL SCALE 1:200@A1



DATUM RL 604.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
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3.228		621.362
6.618		621.474
9.684		622.081
12.743		621.356
15		621.248
17.676		620.074
19.885		618.416
21.934	617.5	617.593
25	617.5	617.483
28.425	617.5	617.931
35	617.5	618.346
40	617.5	620.814
45	617.5	621.121
50	617.5	622.691
55	617.5	624.797
60	617.5	625.096
63.084	617.5	624.561
65.236	617.5	624.017
67.421	617.5	623.47
69.432	617.5	623.138
72.462	617.5	623.445
75	618.47	623.78
77.316	619.616	624.12
80	620.943	623.397
82.319	621.022	623.084
85	621.089	622.523
88.19	621.155	621.095
91.386		619.281
95		618.506
98.382		618.193

LONGITUDINAL SECTION ALONG B2

HORIZONTAL SCALE 1:200@A1
VERTICAL SCALE 1:200@A1

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PROJECT: ARDGLEN QUARRY
ARDGLEN, N.S.W. 2338

DRAWING TITLE: BASIN TYPICAL SECTIONS
TERTIARY BASIN

JOB NUMBER: NL140154
DRAWING NUMBER: C20.03
REVISION: A
DRAWING SHEET SIZE = A1

To: Daniel Smith (Daracon)

From: Stewart Reeve (Victory Engineering)

Re: Daracon Ardglen - Detailed Description of the Stormwater Treatment System, and Discussion of Associated Chemical Risks

Date: 18 / 11 / 15

Background and Summary

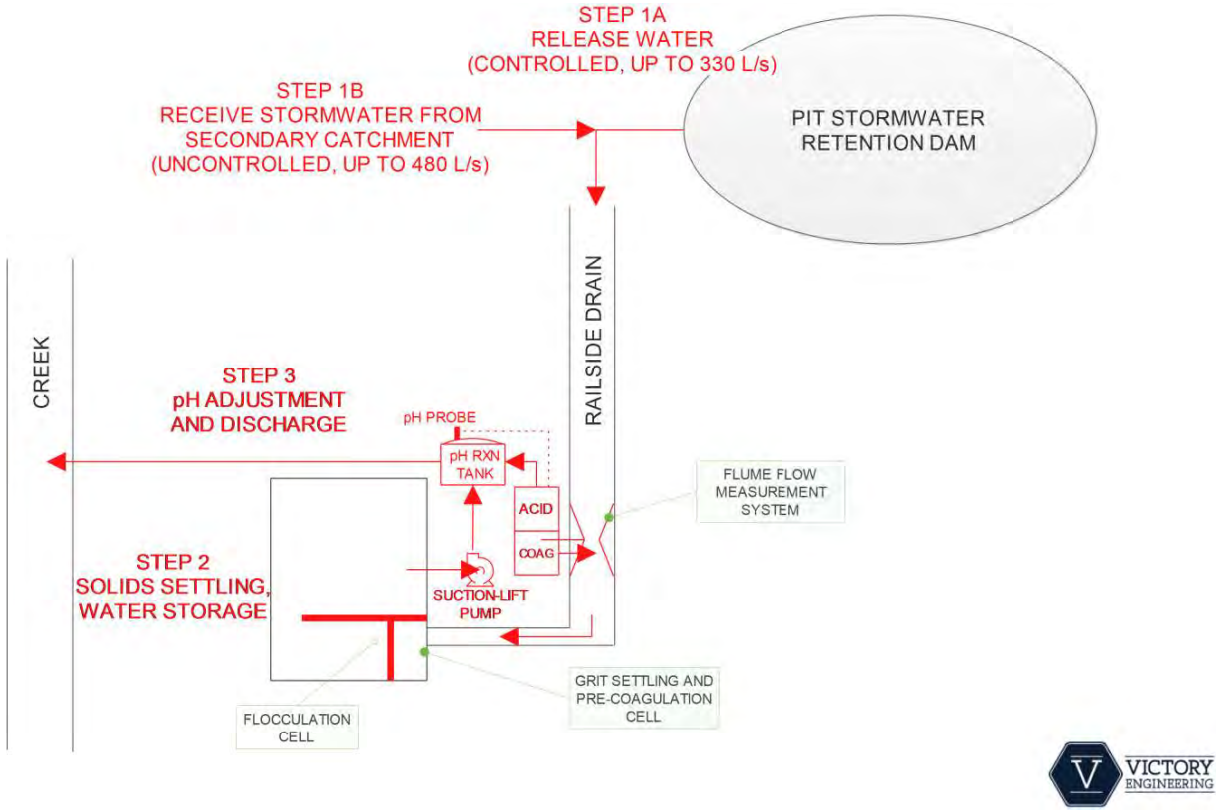
The Daracon Ardglen quarry generally requires treatment of its stormwater runoff prior to discharge, for:

- pH (require 6.5-8.0), and;
- Suspended Solids (require < 50 mg/L TSS – Total Suspended Solids).

Modelling for the peak design storm suggests that the lower/discharge dam needs to cope with up to 480 L/s (direct runoff from catchment area), plus an estimated maximum of 330 L/s coming from release of captured stormwater from the "upper sump". This is a combined estimated maximum design flow of 810 L/s.

Victory Engineering conducted indicative water treatment testwork on synthesised samples of contaminated stormwater. On the basis of other considerations and this testwork, Daracon opted to adopt a dam-based method of dosing and mixing chemicals into the contaminated stormwater to achieve the required pH and TSS specifications prior to discharge. This method is discussed further in the following section.

The adopted general water treatment process is illustrated on the following page:



General Description – High Flow

- All water flowing down the swale drain is measured by the flume.
- A cationic polymer coagulant (polyDADMAC) is dosed into the drain by a metering pump, in proportion to the flow rate; the coagulant begins to react with the suspended solids in the water.
- The grit in the stormwater settles out in the first cell, and possibly some in the second cell.
- The suspended solids in the water flocculate in the first cell, and some settlement occurs.
- Water continues to flow through the permeable wall, and into the second cell.
- Suspended solids continue to flocculate in the second cell, and more of the suspended solids settle in the second cell.
- Water continues to flow through the permeable section of the wall into the third, largest and final cell.
- The remainder of the suspended solids will settle in the final cell; a clear water layer will form at the surface of the dam, predominantly towards the far end of the dam.
- When required (either manually or automatically triggered), the extraction pump will remove clean water from the dam and send it to discharge.
- En route to discharge, acid will be dosed into the water.
- The water will finish mixing and reacting with the acid in a large mixing tank.
- A pH probe appropriately located in the mixing tank will feed a signal back to a pH controller, which will in turn adjust the acid metering pump to achieve the desired discharge pH.
- Stormwater that is now appropriately treated for TSS and pH will overflow the mixing tank and progress to discharge by gravity.

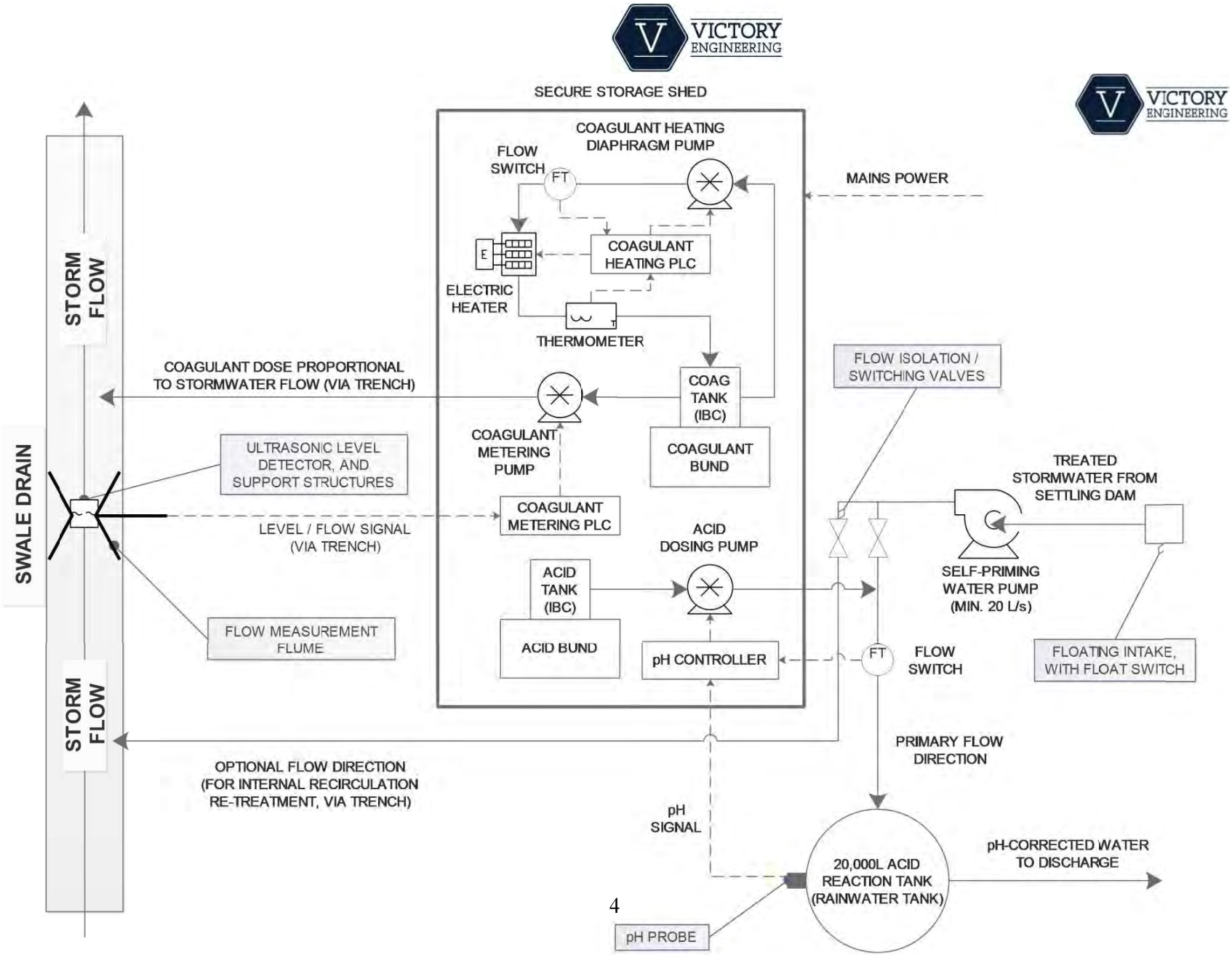
- Once the extraction pumps stops, treated water discharge will cease.
- Water remaining in the mixing tank will drain through the pump, and back into the dam.

Note that the main difference between this “High Flow” description and “lower” flows is that suspended solids will tend to settle more in the first two cells.

The following section provides a more comprehensive description, focusing on the water treatment plant itself.

Detailed Description

The Process Flow Diagram (PFD) on the following page provides a detailed overview of the stormwater treatment system. A detailed description of the process will follow (essentially an expansion of the summary provided in the previous section).


VICTORY ENGINEERING
SECURE STORAGE SHED
COAGULANT HEATING DIAPHRAGM PUMP
FLOW SWITCH
FT
MAINS POWER
COAGULANT HEATING PLC
E
ELECTRIC HEATER
THERMOMETER
STORM FLOW
COAGULANT DOSE PROPORTIONAL TO STORMWATER FLOW (VIA TRENCH)
COAG TANK (IBC)
COAGULANT METERING PUMP
COAGULANT BUND
FLOW ISOLATION / SWITCHING VALVES
SWALE DRAIN
ULTRASONIC LEVEL DETECTOR, AND SUPPORT STRUCTURES
TREATED STORMWATER FROM SETTLING DAM
COAGULANT METERING PLC
LEVEL / FLOW SIGNAL (VIA TRENCH)
ACID DOSING PUMP
ACID TANK (IBC)
SELF-PRIMING WATER PUMP (MIN. 20 L/s)
FLOW MEASUREMENT FLUME
ACID BUND
pH CONTROLLER
FT
FLOW SWITCH
FLOATING INTAKE, WITH FLOAT SWITCH
STORM FLOW
PRIMARY FLOW DIRECTION
OPTIONAL FLOW DIRECTION (FOR INTERNAL RECIRCULATION RE-TREATMENT, VIA TRENCH)
pH SIGNAL
pH-CORRECTED WATER TO DISCHARGE
20,000L ACID REACTION TANK (RAINWATER TANK)
pH PROBE

Detailed Process Description – All Flows

1. Virtually all stormwater flows will report to the swale drain, and be measured by the flume.
   1.1. An ultrasonic level detector will be mounted and calibrated to return an appropriate level signal via its associated transmitter.
   1.2. The transmitter will process the level signal into a calibrated flow value, and deliver a corresponding flow signal to the coagulant dosing PLC (Programmable Logic Controller).

2. The coagulant PLC will adjust the coagulant metering pump to ensure a pre-determined proportional ratio with the flowing water is satisfied;
   2.1. The preliminary (pre-commissioning) ratio is 2 mg/L (~2L per mega-litre (ML) of stormwater); this may be fine-tuned during commissioning.
      2.1.1. Indicative testwork showed that a dose of 2-3 mg/L was sufficient to produce moderately-large flocs, in conjunction with several minutes of gentle mixing, over a range of different TSS concentrations and pHs.
      2.1.2. This is environmentally beneficial, suggesting that the chosen chemical program is robust to changes in water chemistry, and that relatively small amounts of coagulant are required, with the greatest observable gains (and deficiencies) arising from mixing energy and time. Hence, cell design has focused on promoting appropriate mixing energy and time, to offset coagulant dosage.
   2.2. Dosing will be restricted to minimise the probability of coagulant overdose, due to uncertainties in flow measurement at the lower and upper ends of the flume's capabilities:
      2.2.1. Preliminary figures for dosage restriction are:
         2.2.1.1. Lower bound: 10 L/s (flows below this may not register discernibly to the ultrasonic level detector).
         2.2.1.2. Upper bound: 350 L/s (approximate estimate of maximum controlled release from the upper stormwater sump; flows much above this may overwhelm the physical design of the flume).
         2.2.1.3. These figures may be fine-tuned during commissioning.
      2.2.2. For flows below 10 L/s, which actually register as flows, a small proportional amount of coagulant will be dosed – say, equivalent to approximately 1 mg/L.
      2.2.3. Above 350 L/s, a fixed dose rate (L/hr) will be delivered – the same actual L/hr dose delivered at 350 L/s; this means that increasing flow will receive a diminished dose ratio (mg/L).

2.3. Coagulant will be delivered and stored in 1,000L IBCs (Intermediate Bulk Containers), in a secure shed.

2.4. The coagulant IBCs will be stored over on an appropriate bund – probably of 1,500L volume; the bund is also protected from stormwater ingress by being stored in the secure shed.

2.5. Typical polyDADMAC coagulants have a freezing point of ~5 degrees Celsius; as the temperature at site will frequently drop below this temperature during winter in particular, an automatic heating system is required to keep the temperature of the bulk coagulant above 5 degrees Celsius, and probably in the range of 10-15 degrees Celsius.

2.5.1.1. The preliminary design for a heating system involves a bulk recirculation pump, flow switch, electric heater, electronic thermometer and heating controller; however, this may change at the detailed design stage (such as to a heat pad system, or internal heating coil system, etc).

3. Dosed coagulant will begin mixing and reacting with the contaminated stormwater in the swale drain.

4. Flocculation will begin to occur in the first, smallest cell;

4.1. Testwork showed that several minutes of gentle mixing were required to maximise coagulant dose effiency (economic and environmental benefits), as well as capture more of the ultrafine clays; the suspensions were sensitive to high-shear beyond an initial “flash” mix, and did not reform well without the addition of extra coagulant and further gentle mixing.

4.2. The first cell has been sized to ensure that a minimum of several minutes of appropriately energetic mixing will occur at a peak flow of ~810 L/s;

4.2.1. The second cell will provide even gentler conditions and more time for particle floc-formation at the peak flow.

4.3. Grit will generally settle in the first cell;

4.3.1. The size and geometry of the cell have been designed so that an excavator can safely and efficiently remove grit from the cell, as required.

4.4. During high flow conditions, most of the suspended solids will settle in the second and third cells.

4.5. During low and moderate flow conditions, most of the suspended solids are expected to settle in the first and second cells, with generally clean water reporting to the third cell.

5. The wall between the first and second cells is permeable, allowing easy flow.

6. The wall between the first and third cell is relatively impermeable, minimising undesirable short-circuited flows between these two cells.

7. The section of wall at the end of the second cell farthest from the inlet is permeable; the remainder of the wall between the second and third cells is relatively impermeable;
   7.1. This design maximises mixing times for the coagulant and stormwater, thus minimising the possible residual coagulant in the clean water/supernatant.

8. The clean water extraction/discharge pump is located towards the far end of the third and final cell, and will have a flow of approximately 20 L/s (preliminary figure), depending on the height of the water in the dam;
   8.1. It is still to be determined whether the extraction pump will be located in the secure shed, or just outside the secure shed – this depends on how close the secure shed can be located to the dam.
   8.2. The pump can be operated either automatically (on level control), or manually (with low-level cut-out protection).
   8.3. The pump intake will be fixed to floats, to minimise the uptake of possible settled sludge in the discharge water; the pump will have an appropriate automatic low-level cut-out switch.
   8.4. When the pump starts, and the flow switch in the discharge pipe is triggered, the acid metering pump will begin to dose.
      8.4.1. The flow switch ensures that acid is only dosed when water is flowing, thus minimising the chance of acid overdose.
      8.4.2. From testwork, the preliminary dose rate of acid (30% Hydrochloric acid) is estimated at 50-100 mg/L, to achieve a pH of ~7.5 (which is also the preliminary discharge value to be used for commissioning; this value may change during commissioning and/or later operations).
         8.4.2.1. The actual acid to be used will be either 30% Hydrochloric, or ~35% sulphuric acid.
      8.4.3. A pH probe in the mixing tank will feed a pH signal to the pH controller in the secure shed.
      8.4.4. The pH controller will adjust the acid metering pump to achieve the setpoint.
   8.5. The water and acid will react completely in the upstream tank;
      8.5.1. This water tank will be approximately 20,000L in volume, and will be bottom fed.

8.5.2. The mixing time in the tank will be approximately, 10-15 minutes, depending on the flowrate into the tank; the flowrate compared to the tank volume will also ensure that mixing is adequately turbulent, to ensure full acid reaction with the water.

8.5.3. The residence time also allows the pH controller to have sufficient opportunity to adjust the pH of the water before it is discharged offsite.

8.5.3.1. Testwork showed that such a mixing time is adequate to obtain a stable pH, where the acid appears to have fully reacted with the water, and the pH stops declining.

8.5.4. The tank will be bottom fed, and the tank overflow (to discharge) will be at the top of the tank – this will ensure a maximised residence time, by minimising short-circuiting of the inlet flow to the discharge outlet.

8.5.5. The pH probe will be located low in the tank, at the discharge end of the tank – this is to ensure that the probe can read the pH of water as it first enters the tank and begins filling the tank (sending the pH signal back to the controller), as well as take readings of water that is close to exiting the tank.

8.6. Water leaving the acid mixing tank will report to the discharge outfall via a short pipeline.

8.7. It is possible that between the time of writing this document and the time of final detailed design that the desired extraction rate will change – say, increase to 50-100 L/s, to possibly increase discharge rates. If this does occur, appropriate changes will also be made to the dosing, control and mixing systems to ensure system design integrity is preserved.

9. The system will also have the capacity to internally re-treat water if it has not been adequately treated for suspended solids en route to the dams, such that unsatisfactory levels of suspended solids remain in the final cell:

9.1. Valving on the discharge of the extraction pump will allow switching between:

9.1.1. Discharge, via the acid dosing system; or,

9.1.2. Recirculation, via the swale drain, flow-measurement flume, and the coagulant dosing system.

10. The secure shed will receive mains power; power will be distributed to all water treatment system components via the centralised power distribution panel located inside the secure shed.

Management of Risks Arising from Water Treatment

EPA requirements, and the nature and volumes of stormwater from the Ardglen site mean that the waters typically require treatment prior to discharge from site.

Testwork involving site water samples indicated that the use of a polymer coagulant (polyDADMAC) for suspended solids reduction is highly effective at dose rates of < 3 mg/L, over a wide range of suspended solids levels, and pH values. An example of a common polyDADMAC coagulant is Nalcoag 3268; the MSDS for this chemical has been provided as an attachment with this document.

Testwork indicated that conventional flocculants (polyacrylamide co-polymers) were relatively ineffective for the reduction of suspended solids

pH reduction testwork indicated that the use of 30% hydrochloric acid was effective for the reduction of pH to required levels. 50-100 mg/L of 30% hydrochloric acid was typically required to reduce the pH of tested samples to 7.5.

Experience suggests that a dam-based treatment program involving such chemicals is often the most cost-effective way to treat quarry stormwaters requiring discharge, for suspended solids and pH compliance, where the appropriate standards and hard and soft controls are part of the design and operation of the treatment system.

However, the use of chemicals to treat stormwaters that are to be discharged to the environment is not without risk. These risks have been considered by Victory and Daracon in the selection of an appropriate treatment system, and are further discussed below.

Coagulant Risks

The primary risk when using coagulants to treat stormwater is the issue of coagulant residuals entering environmental waterways and negatively impacting aquatic life, particularly fish; this applies to both polymeric and metallic coagulants. Metallic coagulants carry the added risk that they operate by consuming alkalinity in the water, such that their efficacy is variable, dependent on the alkalinity of the treated water; they can also reduce the pH of the water (this may or may not be beneficial, depending on the situation).

Both polymeric and metallic coagulants are able to harm aquatic life, particularly fish, at residual concentrations of < 1 mg/L – harm thresholds depend on several variables, notably:

- The species of fish;
- The concentration of the coagulant residual;
- The prevailing water chemistry;
- The type and concentration of suspended solids in the water;
- The duration of effect – regarding time for recovery, or not; and,
- The type of coagulant.

The mechanisms of harm is understood in literature to be the blinding of oxygen adsorption sites on the fish gills by the coagulant molecules, effectively causing partial or full asphyxiation, depending on the net concentration of the coagulant in the receiving water.

The causes of unacceptably high coagulant residuals are generally:

- Over-dosing; and/or,
- Under-mixing – insufficient mixing energy and/or time, requiring extra coagulant to achieve the desired outcome; and/or,
- Over-mixing – excessive mixing energy and/or time, leading to floc destruction (which may or may not be reversible), requiring extra coagulant to achieve the desired outcome.
- A technically inappropriate coagulant type – adequate testwork and/or process considerations have not been made; and/or,
- An environmentally inappropriate coagulant type – such as one with a typically high residual ("Alum" is an example of a common culprit).

Treatment systems utilising coagulants that do not consciously and deliberately consider these risks and their causes on a unique site-by-site basis, and mitigate them via the subsequent design, increase their risk profile.

Mitigation of Coagulant Risks

The stormwater treatment system design has mitigated the risks of applying a coagulant by deliberately investigating and considering:

- Storage:
  - The IBC base tank will be stored on a compliant and chemically-compatible plastic bund.
  - The bund will be stored in a secure shed, to minimise the probability of stormwater ingress into the bund, as well as vandalism/sabotage.

- Dose rates:
  - Testwork indicated that waters could be suitably clarified with a dose rate of ~2 mg/L of a common polymer coagulant (polyDADMAC).
  - 2 mg/L was effective over a wide range of suspended solids levels and pHs – this is typically a relatively low dose rate, and increases the safety of using the coagulant.
  - The final clarity during testwork at dose rates of 2 mg/L was acceptable (less than 50 mg/L TSS), but not generally "crystal clear" – ensuring treated and well-mixed (appropriate energy and time) waters still have some suspended solids in the final supernatant greatly increases the probability that there is no significant coagulant residual, and that the water is safe for environmental discharge.

- Coagulant type:
  - Polymer coagulants typically have a higher floc reformation potential than metal coagulants – this means that lower average dose rates are required.
  - Metal coagulants typically have higher residual fractions than polymer coagulants such as polyDADMAC – that is, as a fraction of the applied dose, metal coagulants will have a high % remaining in solution, which may progress to discharge rather than settle with flocculated suspended solids. For example, metal coagulants such as Alum often have residuals in the order of 1-5% (depending on certain chemical and process factors). PolyDADMAC typically has a residual < 0.1%.
  - Polymer coagulants like polyDADMAC typically quickly hydrolyse (react with the water) to form derivatives that are less charged and more bio-available (for bio-degradation) – this begins upon dosing, and is often close to 100% complete within several days to a week, depending on various factors.
  - Hence, the efficacy of polyDADMAC at low dose rates, combined with its low

fractional residual tendency and bio-degradability, make it a good choice for this application.

- Mixing intensity and time:
  - Testwork revealed that the flocs formed with polyDADMAC were shear-sensitive.
  - An initial "flash" mix, with subsequent "gentle" mixing for a minimum of several minutes, provide to provide very good, acceptable results, with some residual turbidity (desired).
  - The treatment system has been designed to provide these energy requirements:
    - Flash mix – by dosing into the swale drain, which will generally be flowing turbulently, even under "low-flow" conditions;
      - Several mixing rocks will be placed downstream of the coagulant dose point, to ensure a short-burst of increased turbulence, even during low-flow conditions.
    - Extended gentle mix – the first and second cells provide the opportunity for gentle mixing conditions, and extended mixing times, before treated water progresses to the third and final cell.

- Coagulant application method:
  - Metering pumps will be used to apply the coagulant – this increases the precision of the operation, as opposed to dry chemical or dam-surface application methods, as well as generally decreasing the amount of chemical required.

- Control philosophy:
  - The coagulant dosing system will be automated:
    - Incoming flows will be measured, and a control system will the coagulant is dosed in proportion to the flow (eg. 2 mg/L).
    - Where measured flows are less accurate, dosing rates will be mitigated:
      - Low-flows: a reduced ratio of coagulant will be applied – say, ~1 mg/L.
      - High-flows: above a certain figure (eg. 350 L/s) a fixed coagulant dose (L/hr) will be applied, such that higher flows will receive a reduced dose ratio.

- Rectification potential:
  - The output from extraction pump for the final dam can be directed to the swale drain for re-treatment, if the suspended solids level of the first-pass supernatant is unacceptable, for whatever reason.

Acid Risks

From an environmental point of view, the risks associated with the application of 30% hydrochloric acid or sulphuric acid at low-moderate dose rates (such as are expected at Ardglen) are much simpler than for coagulants: unacceptably low pHs, arising from overdose of acid.

Mitigation of Acid Risks

The simplest and most effective way to mitigate the risk of acid overdose is the utlisation of automation. pH correction automation systems are generally simple and proven technologies, as well as easy to use, and cost effective.

Testwork indicated that 5-10 minutes was generally required for a stable pH to be achieved. Hence, at discharge rates in the order of the proposed 20-100 L/s, pH correction of clarified waters whilst in the process of being discharged is practical, environmentally feasible and cost-effective (less process and/or civil infrastructure required). This is accomplished by installing an acid mixing tank (a common rainwater tank) after the extraction pump but prior to the discharge point. The tank is appropriately specified to provide the appropriate mixing intensity and time for complete acid-water reaction.

Acid is dosed prior to the mixing tank by a metering pump. A pH probe located in the mixing tank for representative, low-lag measurement sends a signal back to the pH controller in the secure shed. The pH controller adjusts the acid metering pump to achieve the desired setpoint.

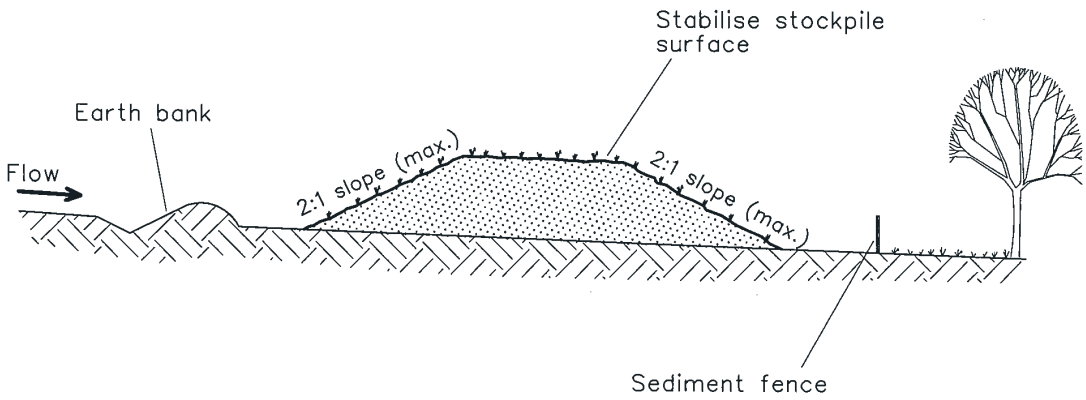
The preliminary pH setpoint will be 7.5. This figure is suitably lower than the required upper threshold (8.0) and suitably higher than the lower threshold (6.5), such that it is outside of a typical pH probe's drifting error bounds between calibrations. This figure is easily changed via the pH controller, if required.

The operator initiating discharge of water from the dam is able to fill the mixing tank with representatively-treated water, before taking a sample for lab analysis prior to discharge by tank overflow, if required.

Storage of the acid will be in IBCs; the IBCs will be stored on a compatible and compliant plastic bund, which will be inside the secure shed.

APPENDIX B

Blue Book Standard Drawing



Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

STOCKPILES **SD 4-1**

APPENDIX C

Groundwater Letter Report

umwelt
Environmental & Social Consultants

Inspired People
Dedicated Team
Quality Outcomes

Our Ref: 21409_Ardglen Desktop Review and Bore Plan_V2.0.docx

21 July 2021

Luke Robinson
Systems Manager – Construction Materials
Daracon Group

E|luke.robinson@daracon.com.au

Dear Luke

Re: Ardglen Quarry Desktop Review and Bore Plan

1.0 Introduction

Ardglen Quarry (the Site), formerly operated by Railcorp, has been established for over 100 years and is situated approximately 4.5 km north-west of Murrurundi and 53 km north of Scone in NSW. The site has been in care and maintenance since 2012, and in March 2021 Daracon Group (Daracon) received approval for the Ardglen Quarry Extension (Modification 2) by the Minister of Planning (Ref: 06_0264).

In accordance with the consolidated consent Condition 18E of the Project Approval, Daracon is required to install of a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump in consultation with DPIE Water. In addition, under Condition 20 the Site Water Management Plan requires development of a Groundwater Monitoring Program (GMP), with specific requirements for the program outlined under condition 23B.

This report provides a review of the relevant publicly available data for the site and includes recommendations for the proposed location and construction details for the monitoring bore to address Condition 18E (**Section 4.0**). **Section 4.0** also outlines indicative locations and construction details for additional monitoring locations that could be used for the GMP, along with recommendations on monitoring frequency and parameters.

2.0 Conditions and Regulation

As outlined in the current Project Approval, the following Conditions relate to groundwater:

- Condition 18E - Prior to commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary), the Applicant must install a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump, in consultation with DPIE Water.

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- Condition 20 - The Applicant must prepare a Site Water Management Plan for the development, a in consultation with EPA, DPIE Water, DPIE Crown Lands and ARTC, and to the satisfaction of the Planning Secretary. This plan must be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary, and must include:
    - (d) a Groundwater Monitoring Program.
- Condition 23B - The Groundwater Monitoring Program must:
    - (a) incorporate at least 12 months of baseline data on groundwater levels obtained from the monitoring bore required under condition 18E of this Schedule;
    - (b) include groundwater performance criteria, including trigger levels for identifying and investigating any potentially adverse groundwater impacts (or trends) associated with the development;
    - (c) include a program to identify, report on and respond to any unauthorised groundwater interference, including inflows into extraction areas or interaction between on-site water storages and the groundwater system; and
    - (d) include a protocol to obtain appropriate water licence(s) for any groundwater take; and
    - (e) be submitted to the Planning Secretary for approval within 12 months of commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary).

To address Condition 18E, a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump has been proposed (**Section 4.1**). Additional monitoring bores have also been proposed in **Section 4.1** to be included in the Groundwater Management Plan. To address Condition 23B (a), an initial monitoring program to collect 12 months of baseline data has been proposed, with further information provided in **Section 4.0**. Once sufficient data has been collected, the GMP can be developed with site specific triggers.

As captured under Condition 23B(d), Daracon are required to obtain appropriate licenses for any groundwater intercepted as part of the operations. The Site occurs within the eastern extent of the Liverpool Ranges Basalt groundwater management area under the Murray Darling Basin Fractured Rock Groundwater Sources (2020). In accordance with the *Water Management Act 2000*, groundwater intercepted within the Liverpool Ranges Basalt MDB Groundwater Source is required to be licenced, with the long-term average annual extraction limit set at 2,160 ML/year.

To support the licence application and ongoing reporting, it is anticipated that work will be required to characterise the groundwater regime and quantify the volume of groundwater likely to be intercepted over the life of the operations. The monitoring program outlined in **Section 4.0** is proposed to provide initial data to assist in characterising the groundwater regime and developing a tool (i.e. analytical or numerical model) to quantify potential take.

3.0 Site Setting

3.1 Hydrogeological Regime

The Site is located near the top of the Liverpool Ranges, on the western boundary of the Hunter Valley. Based on State Seamless Geology mapping, the main geological unit at site is the Tertiary basalt of the Liverpool Range Volcanics.

The Tertiary basalt unconformably overlies Jurassic aged Pilliga Sandstone and Purlawaugh Formation. Carboniferous aged Carrabubula Formation is also mapped approximately 400 – 500 m to the north-east of Site, on the northern side of Murrurundi Fault.

The Tertiary basalt is described as undifferentiated basalt, dolerite, polymictic conglomerate, quartzose sandstone and shale. Based on available drill logs for Site, the basalt can be up to around 100 m thick, with weathering extending between 6 m and 36 m depth.

Groundwater distribution within the Tertiary basalt in the vicinity of the Site is likely heterogeneous and influenced by local fracture networks (secondary porosity). The Tertiary basalt is recharged from rainfall, and likely discharges where the unit is incised along creeks and via downward seepage to underlying units. Discharge would also occur where abstracted by private water supply bores and where intersected by mining/quarrying below the water table.

A drilling program within the Site was undertaken during the Millennium Drought in 2007, at the time all holes were reported as dry (ERM 2007). An additional drilling program in 2015 (VGT 2015) intersected water at two holes (Hole 1 and Hole 2) within the extension area at depths of 18.38 mbgl (661.00 mAHD) and 26.00 mbgl (670.42 mAHD) respectively. The location of Hole 1 and Hole 2 is presented in **Figure 2**. These water levels indicate a general flow direction towards the north, following topography. From anecdotal information, it is also understood that seepage expressed at the existing quarry pit face has previously been observed.

Surface elevations within the proposed extension area range from ~735 mAHD in the south-west to 672 mAHD in the north-east and the operations are planned to be extended down to around 626 mAHD. Based on these elevations and the water levels identified in the 2015 drilling program, the extension has the potential to intersect groundwater.

3.2 Private Groundwater Users

A review of the National Groundwater Information System (NGIS) database identified five private groundwater bores within 2 km of the Site. Details on the five bores are included in **Table 1**, and the locations shown in **Figure 1**.

Four of the five registered bores likely target the Tertiary basalt, to depths of 7 m to 91 m depth. The bores are noted as being used for domestic and stock water supply. One bore (GW966777) is located in an area of mapped Carrabubula Formation and is apparently used for domestic water supply.

The existing registered bores could provide additional information on groundwater conditions and usage in the region. A bore census has been proposed to capture this data, and is discussed further in **Section 4.4**.

Table 1 Private bores within 2 km of the Site (NGIS)

Bore ID	Easting GDA94 Z56	Northing GDA94 Z56	Depth (m)	Drilled Date	Status	Likely Geology	Use
GW901077	289091.0	6487614.0	91.00	14/03/1998	Removed	Basalt	House
GW901577	289913.0	6486803.0	7.01	01/01/1978	Unknown	Basalt	House
GW966777	289991.0	6487008.0	4.00	-	Unknown	Carrabubula Formation	House
GW902866	290481.4	6485976.5	61.00	24/02/2018	Unknown	Basalt	Stock
GW969393	290690.0	6486368.0	66.00	25/04/2007	In use	Basalt	House

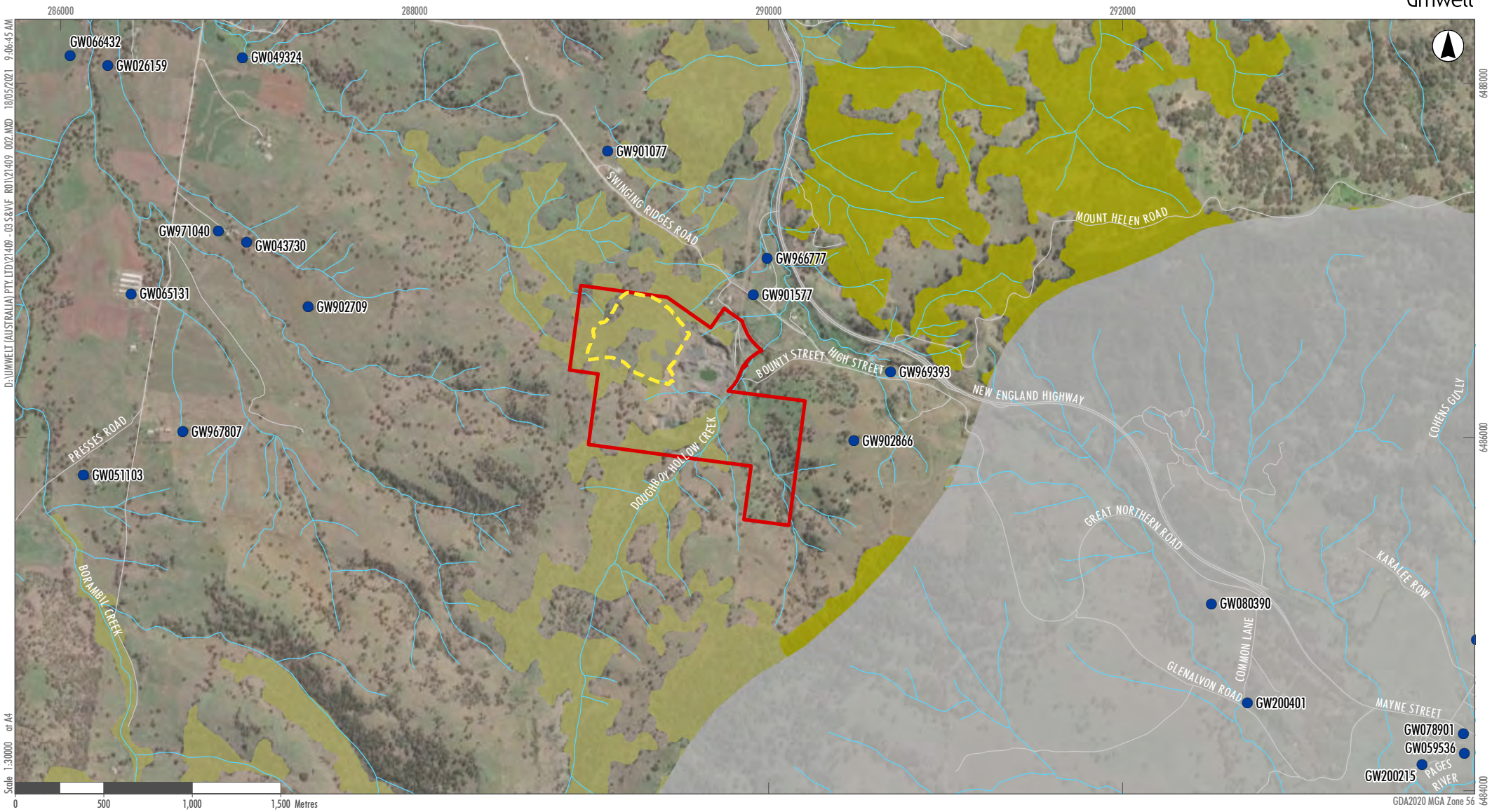
Note: Geology inferred based on State Seamless Geology Mapping.

3.3 Groundwater Dependent Ecosystems

A groundwater dependant ecosystem (GDE) is one in which the plant and/or animal community is dependent on the availability of groundwater to maintain its structure and function. The Commonwealth Government has established the National Atlas of Groundwater Dependent Ecosystems (GDE Atlas). The GDE Atlas includes a consolidated database developed based on the Bioregional Assessment Programme conducted in 2016. The GDE Atlas shows known and potential GDEs, and provides a desktop-based inventory of the location and characteristics of GDEs in Australia. GDE Atlas mapping at the Site is shown in **Figure 1**. The mapping indicates:

- No areas of high potential for groundwater interaction are mapped within the Site or immediate surrounds.
- No areas of moderate potential for groundwater interaction are mapped within the Site, but are mapped approximately 680 m to the north-east from the current pit extent.
- Terrestrial areas of low potential for groundwater interaction have been mapped within the Site, as well as to the south of the current operations. The mapping indicates these correlate with *Angophora floribunda - Eucalyptus albens - Eucalyptus laevopinea* vegetation communities.
- No subterranean ecosystems or ecosystems that rely on the surface expressions of groundwater were mapped within the Site or surrounding area.

It was noted that individual mapping for different river regions is also available online from the Bureau of Meteolology (BoM) GDE Atlas website. This mapping is based on a national assessment conducted from 2009 to 2012 and is apparently updated with recent regional studies. This mapping shows a high potential for groundwater interaction for terrestrial vegetation in the Site, while the more recent mapping indicates only low potential groundwater interaction. Based on the site data that indicates groundwater levels are over 10 mbgl, it is anticipated there would be a low potential for groundwater interaction in this area.



Legend

- Site Boundary
- Extension Area
- Registered Bore (NGIS)

Terrestrial GDE

- Moderate potential for GW interaction
- Low potential for GW interaction
- No EcoSystems Analysed

FIGURE 1

Groundwater Users

Image Source: ESRI Basemap Data source: NSW DFSI (2020), BOM (2021)

4.0 Proposed Field Plan

The requirements set out in Condition 18E and 23B of the project approvals require the installation of a bore with a minimum depth equivalent to the finished depth of the in-pit sump, as well as the development of a GMP as outlined in Conditions 20 and 23B. To address satisfy the requirements of Condition 18E and gather additional data required for Conditions 20 and 23B the following field plan is proposed. **Section 4.1** presents the locations of four proposed monitoring bores with construction details outlined in **Section 4.3** A monitoring program is outlined in **Section 4.4**, with a bore census of surrounding privately owned bores proposed in **Section 4.5** to provide additional baseline data, which will help inform the GMP and future groundwater modelling.

4.1 Proposed Monitoring Locations

To address Condition 18E, a groundwater monitoring bore P3 with a minimum depth equivalent to the finished depth of the in-pit sump has been proposed.

Additional monitoring bores have also been proposed that could be used for the GMP. The proposed bores have been positioned to provide a spatial spread of data. This will enable assessment of the local groundwater regime and inform further assessment for the quantification of groundwater. The proposed monitoring locations, total depth, screened interval, as well as monitoring bore purpose is presented in **Table 2**, and locations shown in **Figure 2**.

The construction details are indicative only and would be dependent on findings during drilling. The final bore construction should be confirmed by a hydrogeologist to optimise the design based on the geology. The locations are also indicative only, and the finalised locations will depend on accessibility and input from Daracon. Alternative locations have been provided for two bores (P2 & P4) if access outside of the site boundary is not possible.

Table 2 Proposed Additional Monitoring Locations

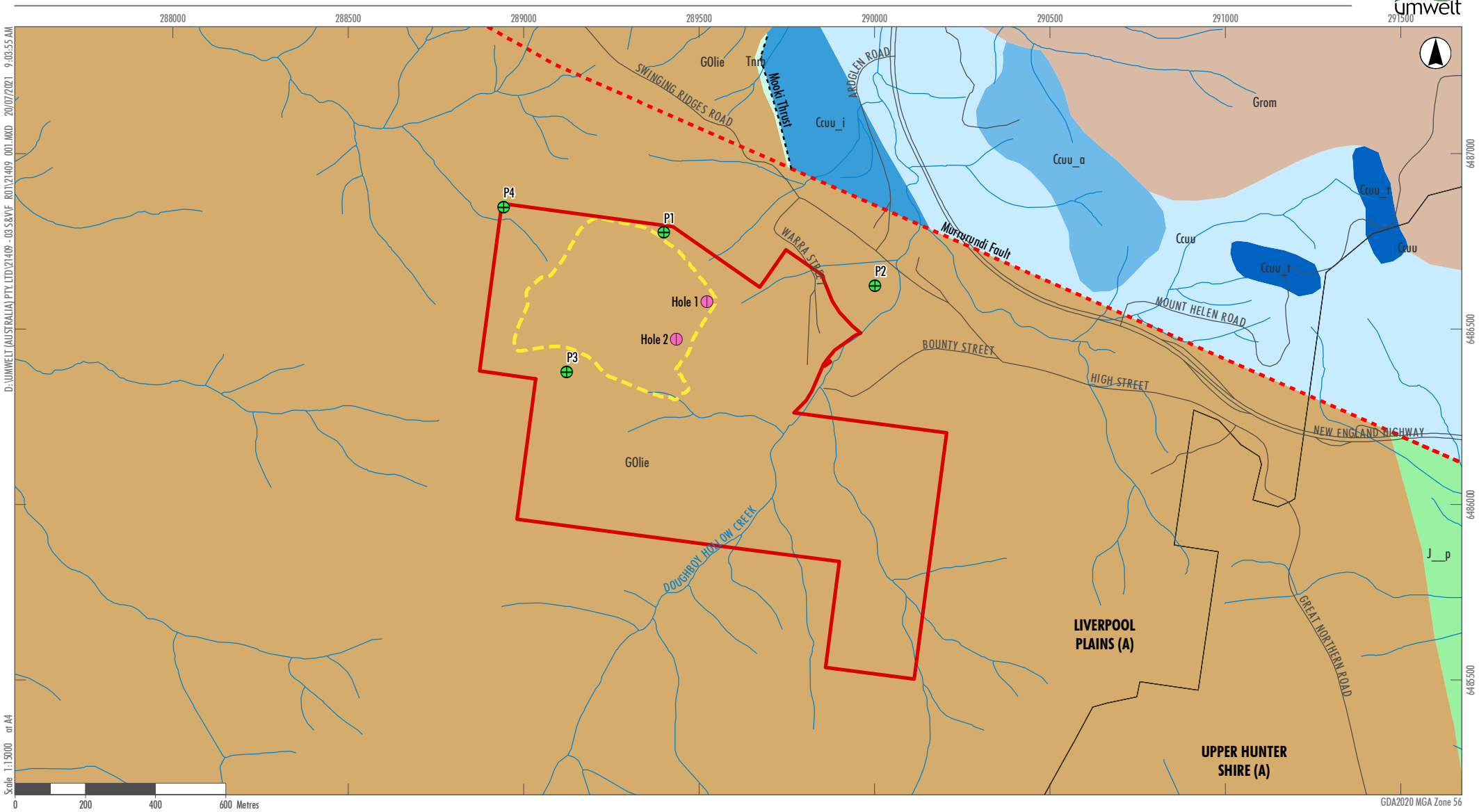
Bore ID	Easting GDA94 Z56	Northing GDA94 Z56	Total Depth	Screened depth (mbgl)	Purpose
P1	289400	6486776	40 mbgl (646 mAHD)	28 – 40	GMP. Targeting fresh basalt, positioned down-gradient of the extension area to map groundwater levels and flow direction and monitor changes during and following operations.
P2	290001	6486624	40 mbgl (572 mAHD)	28 – 40	GMP. Targeting fresh basalt, positioned down-gradient of the extension area and along Doughboy Hollow Creek. To capture any changes in groundwater conditions during and following operations and inform understanding of groundwater regime and surface water/groundwater interactions.
P3	289123	6486379	120 mbgl (to be below total depth of sump at 626.5 mAHD)	99 – 117*	Condition 18E and GMP. Targeting fresh basalt, positioned up-gradient of the extension area, to monitor groundwater conditions and changes during and following operations.

Bore ID	Easting GDA94 Z56	Northing GDA94 Z56	Total Depth	Screened depth (mbgl)	Purpose
P4	288943	6486848	40 mbgl (620 mAHD)	28 – 40	GMP. Targeting fresh basalt, positioned to the north-west near a tributary of Borambil Creek. To capture any changes in groundwater conditions during and following operations and inform understanding of groundwater regime and surface water/groundwater interactions.

Note: all bores should be screened within at least 6 – 12 m of fresh basalt depending on intersected geology;
* 3 m sump on base of bore below screen

4.2 Consultation

In accordance with Condition 18E, a bore must be installed down to the minimum depth equivalent to the finished depth of the in-pit sump, in consultation with DPIE Water. John Williams of DPIE Water was contacted on 19th July 2021 to briefly discuss the concept of installing four bores across the site to obtain the background data on groundwater conditions. As per discussion with John, it is understood a license is not required for the construction of the monitoring bores. However, the proposed locations should be notified to NRAR prior to installation.



Legend

- Site Boundary
- Extension Area
- Proposed Monitoring Bore
- 2015 Drilling Program Water Intersections

Geology

- Liverpool East Basalt
- Mount Royal Volcanics
- Purlawaugh Formation
- Banks Wall Sandstone
- Currabubula Formation
- Currabubula Formation - two-pyroxene andesite
- Currabubula Formation - mudstone
- Currabubula Formation - tuff

Fault

- Fault, position approximate
- Fault, inferred

FIGURE 2

Proposed Monitoring Bores

Data source: NSW DFSI (2020), NSW PI&E (2020)

4.3 Monitoring Bore Construction

Details on the proposed bore locations and indicative depths and screened intervals are included in **Table 2**. All proposed groundwater monitoring bores should be drilled and constructed in accordance with the minimum construction requirement for water bores in Australia 4th edition (National Uniform Drillers Licensing Committee 2020). As bores are proposed to be installed across a single aquifer, a minimum Class 1 licenced driller should be engaged. The method of drilling both the groundwater monitoring bores and VWP's is at the discretion of the drilling contractor.

During drilling, details relevant to the hydrogeology should be recorded, including:

- Lithological logging and sampling at a minimum of 1 m intervals, dependent on the drill method.
- Record the drill progress and conditions, based on information from the driller (i.e. anecdotal information on rock strength and consolidation).
- Monitoring of groundwater inflow during drilling using standard methods (i.e. v-notch weir or bucket). Inflows should be measured at a minimum of 6 m intervals and whenever water is intersected.
- Field sampling of pH and electrical conductivity (EC), and temperature to be recorded using a calibrated water quality meter at regular intervals when drilling on air/water. Water quality to be measured at a minimum at a minimum of 6 m intervals and when water is intersected.

Indicative monitoring bore construction diagrams are presented in **Figure 3**. Construction will be dependent on driller requirements and the actual geology intersected at the location, with final construction details to be confirmed by a hydrogeologist prior to construction. As shown in these figures, bores are proposed to be constructed using:

- Minimum 6 inch (150 mm) diameter hole for groundwater monitoring bores to accommodate surface casing, and 4 ¾ minimum to accommodate bore casing. The hole size will be determined by the chosen licensed water bore drillers.
- 50 mm PN18 PVC-U casing, with preference for PN18 threaded casing (no screws) to assist with sampling.
- 4 mm machine slotted casing.
- A bentonite seal with a minimum thickness of 1 m.
- 150 mm galvanised standpipe with lockable cap.
- Stamped steel plate attached to the standpipe displaying the bore ID.
- Well-rounded and clean gravel pack.
- Grout to surface using factory fresh Portland or Blended (GP) cement to prepare a 5% bentonite powder/cement mix.

Based on the materials listed above and the proposed drill depths, **Table 3** presents an estimate of the required materials for the proposed monitoring bores.

Following installation, all bores should be developed in accordance with the minimum construction requirement for water bores in Australia (2020) using a suitable method (i.e. air lifting and jetting) to ensure water quality samples collected are representative of the groundwater unit.

Table 3 Indicative Monitoring Bore Construction Materials

Item	Description	Quantity	Unit
1	Surface Casing - 150mm PN12 uPVC, bell end	As required	6 m length
2	Blank Casing - 50mm PN18 uPVC, threaded joints	36	6 m length
3	Slotted Casing - 50mm PN18 uPVC, 1mm aperture	21	3 m length
4	Gravel pack - 3-6mm diam. washed, rounded quartz	69	20 kg bag
5	Bentonite - 1/4" pellets	20	buckets
6	Bentonite - powder	2	25 kg bag
7	Cement	117	20 kg bag
8	End caps - for 50mm PN18 uPVC	8	item
9	Headworks - Steel Protector, 150mm lockable	4	item
10	Marker Posts - 1900mm x 60mm steel post with name plate	4	item
11	Poly pipe 32mm HDPE (PN12.5) grout line (incl. bore development)	280	m

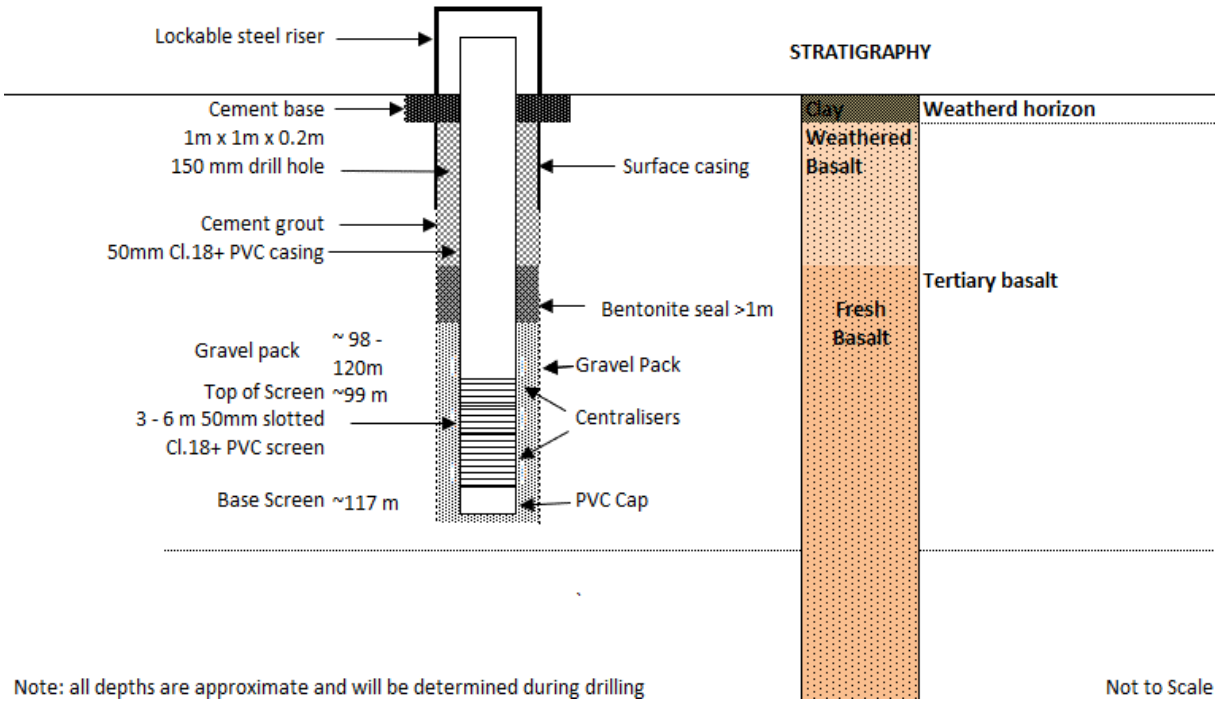


Figure 3 Indicative Monitoring Bore Construction Diagram (Proposed Bore 3)

4.4 Monitoring Program

Following construction, all bores should be surveyed for a top of casing (monitoring reference point) and ground level elevation. The monitoring reference point should also be marked on the casing to assist with consistency of data collection between monitoring events.

It is recommended that all proposed bores be monitored for groundwater level and quality at the additional monitoring bores on a monthly basis for the first year of installation to collect sufficient baseline data for Condition 23B Groundwater Monitoring Program. Following an initial 12 month baseline data collection period, groundwater monitoring should occur on a quarterly basis.

The baseline data collected will be utilised for the characterisation of the groundwater regime, water types, and the identification of potential recharge mechanisms. This will assist in the overall development of the GMP and requirements outlined in Conditions 20 and 23B.

It is recommended that groundwater level loggers be installed in all the proposed monitoring bores to capture seasonality and any response to rainfall events. A single barometric logger should also be installed at one of the bores to allow for data corrections. The loggers should be setup to take measurements every 4 hours on the hour and the data downloaded and checked with each sampling event.

Groundwater monitoring should be conducted in line with standard practices outlined in Groundwater Sampling and Analysis – A Field Guide (Geoscience Australia 2009) and transported with a Chain of Custody (COC) form to a NATA accredited laboratory for analysis. It is proposed that groundwater samples be analysed for the following analytical suites:

- Physical parameters
  - Temperature (field), pH (field and laboratory), EC (field and laboratory), total dissolved solids, redox potential
- Major ions
  - Ca, Cl, K, Na, sulfate as SO_4 – turbidimetric, bicarbonate alkalinity as $CaCO_3$, carbonate alkalinity as $CaCO_3$, hydroxide alkalinity as $CaCO_3$, total alkalinity as $CaCO_3$

Dependent on the activities to be conducted on site, other analytes may be useful to collect to obtain a full baseline dataset for comparison and trigger development in future. This includes:

- Total and dissolved metals
  - Ag, Al, As, Cd, Co, Cu, Fe, Hg, Mg, Mn, Mo, Ni, Pb, Sb, Se, Zn
- Total petroleum hydrocarbons
  - TRH (C6 – C40)/BTEXN plus F1 & F2 (Silica Gel).
- Nutrients
  - Nitrate as N, nitrate + nitrate as N, nitrite as N, Total Kjeldahl Nitrogen as N, total nitrogen as N, total phosphorus as P

4.5 Bore Census

A bore census of the private groundwater user bores identified in **Section 3.2** (refer **Table 1**) could be conducted to provide additional baseline data which will help inform the GMP and future groundwater modelling. The bore census would provide more water level data, as well as assist in understanding the water usage and potential receptors within the aquifer. The bore census would also identify any unregistered or recently drilled bores. It is understood that there may also be bores on land owned by Daracon.

During the bore census it is recommended that details be recorded about the bore construction, including the total depth of the bore, screened interval, how it is equipped (i.e. pump infrastructure) and usage (i.e. stock water). Where possible, groundwater levels should be measured and groundwater quality samples collected to test for field parameters (i.e. EC and pH) and for laboratory analysis. The bore census findings should be recorded on a bore census card, which can be utilised in the GMP. The card should include photos of the site and detail the location of the bore, construction details, use and other relevant information.

5.0 Closing

To address Condition 18E and 23B of the Project Approval, this letter report presents locations and construction details for four proposed groundwater monitoring bores and a proposed initial monitoring program. This report also proposes a private bore census with recommendations about data that could be collected to help inform the GMP.

We trust this information meets with your current requirements. Please do not hesitate to contact the undersigned on 0436 613 948 should you require clarification or further information.

Yours sincerely

Jackson Newton
Senior Hydrogeologist

APPENDIX D

Evidence of Consultation

NSW GOVERNMENT | Planning, Industry & Environment

MP06_0264-PA-15

Ardglen Quarry - Site Water Management Plan (MP06_0264-PA-15)

The Department of Planning, Industry and Environment – Crown Lands has reviewed the proposal.

Crown land and Crown waterways are impacted by the water management associated with historical and planned works at Ardglen Quarry. Changes to the hydrology of Doughboy Hollow Creek will impact the Crown estate adjacent to and downstream of the project area.

Consent will be required (potentially by way of Crown land licences) for:

- works occurring within Doughboy Hollow Creek
- surface water pump sites on Crown waterways
- extractive bores on Crown land or within Crown waterways
- monitoring bores on Crown land. Potential that the P2 monitoring bore may be intended to be located on Crown land.

It is noted that the proponent has indicated awareness of this requirement for consent and intends to consult. If the required mechanism for authority is a licence, then it must be secured prior to the impact occurring on Crown land. Licencing can take a protracted length of time in some cases and so it is encouraged that the proponent consult early on these works.

Crown reserves and Crown roads are located adjacent to the proposed works site. There is a limited right of access to Crown waterways, and a right of public access to both Crown reserves and Crown roads – the existence of tenures (such as licences or enclosure permits) does not negate the right of access to the wider public. Given the scale of the works and the potential public interface, we recommend discussions with Tamworth Crown lands to plan mitigation of public safety risks.

Details on how to apply for a licence are available via the following link.
https://www.industry.nsw.gov.au/lands/use/licences

For consultation on site-specific matters, please contact Tamworth Crown lands at tamworth.crownlands@crownland.nsw.gov.au

Thank you

Deb Alterator
Project Support Officer
Crown Lands
| E lands.ministerials@dpie.nsw.gov.au

DOC21/657649-2
5 August 2021

Industry Assessments
Planning and Assessment Division
Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124
Email: @planning.nsw.gov.au

EPA Submission on Request for Advice on Site Water Management Plan

Thank you for your request from Public Authority Consultation (PAE-24877627) for the Environment Protection Authority (EPA)'s advice on the Site Water Management Plan for Ardglen Quarry (MP06_0264-PA-15).

The EPA does not provide advice on or endorsement of any management plans developed for planning assessments.

Accordingly, the EPA will not be providing comment further to this request.

Please contact myself on (02) 6773 7000 or by email to armidale@epa.nsw.gov.au if you wish to discuss this matter further.

Yours sincerely,

LINDSAY FULLOON
Manager Regulatory Operations, Regional West

umwelt

NSW GOVERNMENT

Department of Planning and Environment

Our ref: OUT22/3325

Jess Watson
Planning and Assessment Group
NSW Department of Planning and Environment

Email: jess.watson@dpie.nsw.gov.au

28 April 2022

Subject: Ardglen Quarry (MP06_0264-PA-15) – Site Water Management Plan (SWMP)

Dear Ms Watson

I refer to your email of 18 March 2022 to the Department of Planning and Environment (DPE) Water about the above matter.

The most recent approval granted for this quarry was in March 2021 for a modification to the Consent (Modification 2). This current request is to review the Site Water Management Plan (SWMP).

Recommendations regarding the requirements of approval conditions relating to groundwater monitoring, operational performance and licencing are provided in Attachment A.

Please note that the licensing and approval function has now moved from NRAR to DPE Water. Any further referrals to DPE Water and NRAR can be sent by email to water.assessments@dpie.nsw.gov.au. or to the following coordinating officer within DPE Water:

Simon Francis – Senior Project Officer
E: simon.francis@dpie.nsw.gov.au
M: 0428 926 117

Yours sincerely

E Rogers

Liz Rogers
Manager, Assessments, Knowledge Division
Water Group

Attachment A

Detailed advice to DPE Planning & Assessment regarding the Ardglen Quarry (MP06_0264-PA-15) - Water Management Plan (WMP)

1.0 Groundwater

1.1 Recommendation

The proponent should drill the monitoring bore to a depth equivalent to the in-pit sump as required under Condition 18E at least 12 months prior to commencing quarrying within the expansion area.

Explanation

Condition 18E states "prior to commencing quarrying operations in the Extension Area (or other timeframe as agreed by the Planning Secretary), the Applicant must install a groundwater monitoring bore with a minimum depth equivalent to the finished depth of the in-pit sump, in consultation with DPE-Water".

Initial discussions were held with DPE-Water in July 2021 resulting in a commitment for four monitoring bores. The SWMP refers the reader to Appendix C Groundwater Letter Report. This letter presents a scope of proposed works for up to 4 monitoring bores with one bore being (P1) nominated to satisfy condition 18E.

DPE-Water notes the quarry's proposed depth is 626 m AHD (ref: SWMP Appendix C Section 3.1). The nominated monitoring bore depths are presented in Appendix C Table 2 showing the total depth for bore P1 at 646m AHD which is not equivalent to the in-pit sump depth.

1.2 Recommendation

That the proponent develop a Groundwater Monitoring Program for inclusion in the SWMP as required under Condition 20.

Explanation

'Section 7.0 Groundwater Management Plan' of the SWMP states a commitment to update the SWMP within 12 months of quarrying in the extension area. No technical information has been provided for review at this point in time.

1.3 Recommendation

That the proponent present the baseline data, performance targets and other elements of a Groundwater Monitoring Program as required under Condition 23B.

Explanation

Condition 23B of Schedule 3, states prescriptive requirements for the Groundwater Monitoring Program, the content of which is to be submitted within 12 months of commencing quarrying operations. No technical information has been submitted for review at this point in time.

1.4 Recommendation

That the proponent obtain a Water Access Licence (WAL) to account for the estimated groundwater inflow.

Explanation

Condition 21 specifies that the site water balance must predict groundwater inflows and out flows. Section 4.1.1 of the SWMP indicates the potential groundwater take of between 28.5 to 57 kL/day of groundwater take is possible. However, until the conditions 18E, 20 and 23B are

satisfied predicted groundwater take cannot be accurately determined and will require revision once the observation bores are completed.

Should groundwater be intercepted, a WAL under the *Water Management Act 2000* must be obtained unless the take is less than or equal to 3ML of water per year for any aquifer interference activities listed in Clause 7 of Schedule 4 of the Water Management (General) Regulation 2018. For more information visit:

https://www.dpie.nsw.gov.au/nrar/how to apply/water licences/Groundwater

To qualify for an exemption to hold a water access licence, the proponent should:

- record the water take within 24 hours in the approved form and manner;
- provide the water take records to the Minister by no later than 28 July for the year ending 1 July during which the water was taken (e.g. included in the annual report); and
- keep the water take records for a period of five years.

End Attachment A

Luke Robinson

From: Timothy Baker
Sent: Friday, 17 June 2022 12:04 PM
To: Jess Watson
Cc: Simon Francis
Subject: FW: DPE Water advice on MP06_0264-PA-15

Hi Jess,

In response to your request below please see my comments in your email in red. If you need to discuss further please let me know.

Regards
Tim

Tim Baker
Senior Project Officer
Water Assessments
Department of Planning and Environment—Water
T 0428162097 | E tim.baker@dpie.nsw.gov.au

From: Jess Watson <jess.watson@dpie.nsw.gov.au>
Sent: Thursday, 12 May 2022 12:21 PM
To: Simon Francis <simon.francis@dpie.nsw.gov.au>
Cc: Wayne Jones <wayne.jones@planning.nsw.gov.au>
Subject: FW: DPE Water advice on MP06_0264-PA-15

Hi Simon,

As per our phone conversation, could you please advise whether Daracon's comments below adequately address the comments contained in the advice from DPE Water (ref. OUT22/3325, see attached). Please see my additional questions/comments for consideration by DPE Water in blue text below.

In regard to Daracon's comment:

> Within DPE Water's response Section 1.1 (Explanation), they state *"The nominated monitoring bore depths are presented in Appendix C Table 2 showing the total depth for bore P1 at 646m AHD which is not equivalent to the in-pit sump depth"* which is correct, however the DPE Water representative has neglected to review the details of the three other bores installed. As shown below, it is clearly demonstrated within Appendix C Table 2, that Bore P3 satisfies condition 18E of the Approval, so we therefore consider this recommendation and explanation to be redundant;

Three bores have been installed, however not in the initial location proposed by the Appendix C Groundwater Letter Report (refer to Page 82 attached to this email). The Groundwater letter report contains conflicting information, proposing that P1 will satisfy condition 18E in text, however then refers to bore P3 in the below table (see highlighted on Page 82). The depth of bore P3 is inferred to be equivalent to the in-pit sump depth, however bore P3 is located to the south of the extension area, which is up-gradient from the in-pit sump. Does DPE Water have any concerns with the placement and depth of the alternate bore (P3)? It is noted that Daracon are still to confirm the depth of bore P3 and the depth of the in-pit sump.

DPE Water accepts the use of a bore at the location of P3 to fulfil the requirement of Condition 18E. The key aspect however is the ability of the bore to monitor groundwater levels at the required depth. This requires the bore to be screened at that depth. The reference in the Table for P3 indicates the bore was proposed to a depth of 626.5mAHD however it is understood there would then be a 3m plug installed which would mean the screened interval could not start until 629.5mAHD, which is not at the base of the in-pit sump. DPE Water recommends the proponent demonstrate the screened interval of the monitoring bore is at a depth equivalent to the base of the in-pit sump.

.....

- Within DPE Water's response Section 1.2 (Recommendation), they state "*That the proponent develop a Groundwater Monitoring Program for inclusion in the SWMP as required under Condition 20*" which is correct, however due to the fact that Condition 23B (e) of the Approval also states "*The Groundwater Monitoring Program must – be submitted to the Planning Secretary for approval within 12 months of commencing quarrying operations in the Extension Area*" the current SWMP does include a Groundwater Monitoring Program (GMP), albeit a preliminary document as a preface to a more substantial GMP once we've obtained sufficient monitoring data;
- Within DPE Water's response Section 1.2 (Explanation), they state "'*Section 7.0 Groundwater Management Plan' of the SWMP states a commitment to update the SWMP within 12 months of quarrying in the extension area. No technical information has been provided for review at this point in time*", which is incorrect as the GMP does include technical information, once again in a preliminary form as a preface to a more substantial GMP once we've obtained sufficient monitoring data;
- Our response to DPE Water's Section 1.3, is effectively the same to their Section 1.2 above;

Are DPE Water satisfied with the preliminary Groundwater Monitoring Plan and Groundwater Management Plan to be included within the SWMP, to be updated when sufficient baseline data has been collected?

Yes. DPE Water will be keen to see the updated plan once the baseline data has been collected.

- Within DPE Water's response Section 1.4 (Recommendation), they state "*That the proponent obtain a Water Access Licence (WAL) to account for the estimated groundwater inflow*" however within Section 1.4 (Explanation) they note that "*predicted groundwater take cannot be accurately determined*", which is correct;

Daracon have not provided further actions to be undertaken in response to DPE Water's initial advice. Are Daracon required to obtain a WAL, and can DPE please advise of the required timing?

The proponent is responsible for predicting the potential groundwater inflows and associated water take (or providing justification where this is not to occur) and ensuring a WAL is obtained with sufficient entitlement to account for water take prior to the take occurring (unless an exemption applies eg. the 3ML exemption). As mentioned in OUT22/3325 it is understood the observation bores need to be installed to assist in determining this. Following installation of the observation bores it is expected the GW inflow/outflows will be predicted and the need to hold a WAL confirmed.

Could you please advise when we may receive a response so I can inform Daracon.

Thank you for your help. Please give me a call on 0420 200 359 if you have any questions.

Kind Regards,

Jess Watson
Planning Officer

Energy, Resources and Industry | Department of Planning and Environment
T 02 9373 2845 | M 0420 200 359 | E jess.watson@dpie.nsw.gov.au

2

From: Michelle Read <michelle.read@crownland.nsw.gov.au>
Sent: Friday, 11 November 2022 8:54 AM
To: Luke Robinson
Cc: BAR Ardglen Quarry; John Cannon; Anna Cronin
Subject: RE: Daracon Ardglen quarry - Crown Land approvals required

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Luke

Thanks for sending through the update – we look forward to receiving your licence application in the near future.

Kind regards

Michelle Read
Group Leader Property Management

Crown Lands | Department of Planning and Environment
T 02 6763 3013 | E michelle.read@crownland.nsw.gov.au
Level 2, 155-157 Marius Street, Tamworth NSW 2340

crownland.nsw.gov.au

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically

---

From: Luke Robinson <Luke.Robinson@daracon.com.au>
Sent: Wednesday, 9 November 2022 1:22 PM
To: Michelle Read <michelle.read@crownland.nsw.gov.au>
Cc: BAR Ardglen Quarry <BAR@daracon.com.au>; John Cannon <John.Cannon@daracon.com.au>; Anna Cronin <anna.cronin@crownland.nsw.gov.au>
Subject: RE: Daracon Ardglen quarry - Crown Land approvals required

Good afternoon Michelle,

Apologies for the delay in responding to your email below, but it's taken us a while to navigate through the various matters associated with the Crown Lands general licence.

As an update, we still plan to apply for the Crown Lands general licence however before we're able to do that, we needed to clarify the requirements associated with 'other' approvals and that's taken a while.

1

Pleasingly we've recently received advise from the following regulatory authorities and currently plan to proceed with the advice received from DPE Water and DPI Fisheries:

- DPE Water – As shown in the attached email, DPE Water have confirmed that we do not need to obtain a Controlled Activity Approval (CAA) as the Ardglen quarry Approval is a State Significant Development (SSD) and this negates the need for a specific CAA;
- DPI Fisheries - As shown in the attached email, DPI Fisheries have confirmed that we do not need to obtain a Fisheries Permit as the Ardglen quarry Approval is a State Significant Development (SSD) and this negates the need for a permit under the Fisheries Act ;

We genuinely appreciate the help you and your team continue to provide and we hope to complete the Crown Lands general licence approval process shortly.

Regards Luke

Luke Robinson | Systems Manager - Construction Materials
20 Kullara Close | PO Box 401 Beresfield NSW 2322
p: 02 4974 9200 m: 0417 481 785
Luke.Robinson@daracon.com.au | www.daracon.com.au

From: Michelle Read <michelle.read@crownland.nsw.gov.au>
Sent: Wednesday, 7 September 2022 4:31 PM
To: Luke Robinson <Luke.Robinson@daracon.com.au>; Anna Cronin <anna.cronin@crownland.nsw.gov.au>
Cc: BAR Ardglen Quarry <BAR@daracon.com.au>; John Cannon <John.Cannon@daracon.com.au>
Subject: RE: Daracon Ardglen quarry - Crown Land approvals required

Dear Luke

Thanks for your email – Anna is on leave for a few weeks, so I'm answering on her behalf. Crown Lands has just updated our website and yes, navigation is a little tricky even for us.

Here is the link to the licence application and guidelines for a general licence - Apply for a general licence | Crown Lands (nsw.gov.au)

To accompany the licence application you will need to provide the plans for the works, a copy of your mod approval, a copy of the relevant EA and any other associated approvals (eg Fisheries). The licence application will be initially assessed by our Business Centre who will then forwarded it on to our local office for review. If you have a particular deadline for the licence to be issued, you will need to indicate this on the application.

Once you've had a look at the application and guidelines, please contact me if you need any clarification on the requirements.

Kind regards

Michelle Read
Group Leader Property Management

Crown Lands | Department of Planning and Environment
T 02 6763 3013 | **E** michelle.read@crownland.nsw.gov.au
Level 2, 155-157 Marius Street, Tamworth NSW 2340

2

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crownland.nsw.gov.au

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically

From: Luke Robinson <Luke.Robinson@daracon.com.au>
Sent: Friday, 2 September 2022 7:41 AM
To: Anna Cronin <anna.cronin@crownland.nsw.gov.au>
Cc: Michelle Read <michelle.read@crownland.nsw.gov.au>; BAR Ardglen Quarry <BAR@daracon.com.au>; John Cannon <John.Cannon@daracon.com.au>
Subject: Daracon Ardglen quarry - Crown Land approvals required

Good morning Anna,

As mentioned in the recent Ardglen quarry CCC meeting, we're slowly making progress towards the re-opening of Ardglen quarry and we're at the point where we need to obtain the additional approvals to undertake the work in and adjacent to Doughboy Hollow Creek.

As shown below, condition 18B from the Consent provides the details. I've attempted to navigate the Crown Lands webpage but it's not clear to us how this works, so we're hoping you're able to assist us to obtain the appropriate licence / approval?

3

SURFACE AND GROUND WATER

18A. The Applicant must ensure that the sediment basin described in EA MOD 2 and any structures required for the carrying out of the development are located wholly withi authorised in writing by ARTC and/or DPIE Crown Lands (as relevant).

18B. The Applicant must obtain any necessary licences and/or approvals from DPIE Cro *Crown Lands Management Act 2016* prior to:
(a) carrying out any works on Crown Land; or
(b) allowing the controlled discharge of water from the site to Doughboy Hollow Cr

18C. The Applicant must obtain any necessary licences and/or approvals from the ARTC any works described in the MOD 2 EA within the Right of Carriageway which burden:

18D. The Applicant must not undertake any excavation exceeding 2 m in depth withi Northern Railway corridor unless otherwise approved in writing by ARTC.[a]

[a] *The 25 m setback is to be measured from the site boundary adjacent to the Main Northern*

18E. Prior to commencing quarrying operations in the Extension Area (or other timefran Planning Secretary), the Applicant must install a groundwater monitoring bore wit equivalent to the finished depth of the in-pit sump, in consultation with DPIE Water.

Notes:
- *The in-pit sump is shown in Appendix 1*
- *The purpose of the groundwater monitoring bore is to inform the development of the G Program*

18F. The Applicant must ensure that any works to be conducted on waterfront land accordance with *Guidelines for Controlled Activities on Waterfront Land* (2018) and DPIE Water.

Thank you.

Regards Luke

Luke Robinson | Systems Manager - Construction Materials
20 Kullara Close | PO Box 401 Beresfield NSW 2322
p: 02 4974 9200 m: 0417 481 785
Luke.Robinson@daracon.com.au | www.daracon.com.au

DARACON Group

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4

From: CL Licences Mailbox <cl.licences@crownland.nsw.gov.au>
Sent: Monday, 21 November 2022 3:48 PM
To: Luke Robinson
Subject: Acknowledgement of Crown Lands Licence Application

File Reference: 16/07878
Account No: RN 638192

Dear Sir/Madam,

Re: ACKNOWLEDGEMENT OF CROWN LANDS AND/OR CROWN ROADS LICENCE APPLICATION

This letter is to acknowledge receipt of your application for a licence. An invoice for payment of $576.00 being the balance of the licence application fee will be sent within the coming weeks

We will be in contact with you again once your licence application has progressed, or, if any additional information is required from you in order to proceed with the application.

If your application is urgent or if you would like to contact us to discuss your particular circumstance, please do so by emailing cl.licences@crownland.nsw.gov.au

If you have any queries in relation to your application, please use the below contact details.

Kind regards,

Kathryn

Licences - Dubbo Business Centre
Crown Lands | Department of Planning and Environment | PO Box 2185 DANGAR NSW 2309
T: 1300 886 235 | F 02 4925 3517 E: licences@crownland.nsw.gov.au
W: www.crownland.nsw.gov.au | www.dpie.nsw.gov.au

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

1

From: HV Property Services <HVPropertyServices@ARTC.com.au>
Sent: Monday, 20 September 2021 6:56 PM
To: John Cannon
Cc: Luke Robinson; John Brown; Mark Robinson
Subject: FW: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)
Attachments: In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms E-1679.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Afternoon,

Please accept this email as ARTC Consent to grant an extension to the attached Agreement in Principle until 31 March 2022, noting the conditions within the Agreement in Principle have not changed.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

I'M FULLY COVID SAFE VACCINATED

M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation
6 Kings Road
Broadmeadow NSW 2292

artc.com.au

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From: HV Property Services
Sent: Monday, 22 March 2021 11:49 AM
To: John Cannon <John.Cannon@daracon.com.au>
Cc: Luke Robinson <Luke.Robinson@daracon.com.au>; John Brown (JBrown@artc.com.au) <JBrown@artc.com.au>; Mark Robinson (MRobinson@ARTC.com.au) <MRobinson@ARTC.com.au>
Subject: FW: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Morning,

1

Please accept this email as ARTC Consent to grant an extension to the attached Agreement in Principle until 30 September 2021, noting the conditions within the Agreement in Principle have not changed.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

P. 02 4941 9602
M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation
2 Kings Road
Broadmeadow NSW 2292

artc.com.au

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From: HV Property Services
Sent: Thursday, 24 September 2020 11:21 AM
To: John Cannon <John.Cannon@daracon.com.au>; Luke Robinson <Luke.Robinson@daracon.com.au>
Subject: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Morning,

Please accept this email as ARTC Consent to grant an extension to the attached Agreement in Principle until 20 April 2021, noting the conditions within the Agreement in Principle have not changed.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

P. 02 4941 9602
M. 0438 149 053
E. SLawrence@ARTC.com.au

2

Australian Rail Track Corporation
2 Kings Road
Broadmeadow NSW 2292

artc.com.au

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From: Sarah Lawrence
Sent: Tuesday, 21 April 2020 9:15 PM
To: John Cannon <John.Cannon@daracon.com.au>
Subject: In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Hi John,

Please find attached *Agreement in Principle* for proposed Sediment Basin Upgrade Works at Ardglen.

We look forward to receiving documentation in relation to the construction of facilities in due course.

Also note to provide the ARTC reference number (located in the top right hand corner) on your application to avoid further fees and charges. An Invoice will be forwarded to you for payment of this AiP.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

P. 02 4941 9602
M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation
2 Kings Road
Broadmeadow NSW 2292

artc.com.au

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ARTC

2 Kings Road
Broadmeadow, NSW, 2292
Locked Bag 1
Broadmeadow, NSW, 2292

P. 02 4978 9800
E. info@artc.com.au
W. artc.com.au

Mr John Cannon
Divisional Manager – Construction Materials
Daracon Group
20 Kullara Close
Beresfield NSW 2322

Email: john.cannon@daracon.com.au

21 April 2020

Dear John

In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms

I refer to your application and advise that "agreement in principle" for the location and design can only be granted by ARTC at this stage.

Therefore, before ARTC can grant approval for the **construction/installation** and issue a Licence for the infrastructure the following is required for review:

1. Final design plans complying with ARTC Standards, Australian Standards, Heavy Haul Infrastructure Guidelines and any reasonable requirements of ARTC.
2. Current Public Liability Insurance
3. Safe Work Method Statement – relating to working in the rail corridor
4. Evidence of Accreditation for personnel working in rail corridor – WHS Induction and Track Safety Awareness/One Track
5. Evidence of RSW Accreditation of Protection Officer
6. ARTC Services Search
7. Transfer water from the quarry extension area into the in-pit sump at a time as to not coincide with the peak flow from the catchment; as per Northrop recommendation Ref: 140154
8. If runoff from the extension area does become directly connected to the in-pit sump, operate the in pit sump at its operating capacity via the controlled release of water when it is above this level, as per Northrop recommendation Ref: 140154
9. Quarry Owner / Quarry's contractors is responsible to repair/replace any of the ARTC Boundary fence if damaged as result of the works.
10. No material is to encroach on ARTC Property.

I look forward to receiving the associated documentation required for the approval of construction of the infrastructure within **6 months** of the date of this correspondence. For the avoidance of doubt, should ARTC not receive the abovementioned documentation during the specified timeframe this "In Principle Agreement" will be withdrawn.

ARTC

If you have any questions in relation to the application process please feel free to contact the undersigned.

Yours faithfully

Sarah Lawrence
Property Officer – Hunter Valley

CONFIDENTIAL

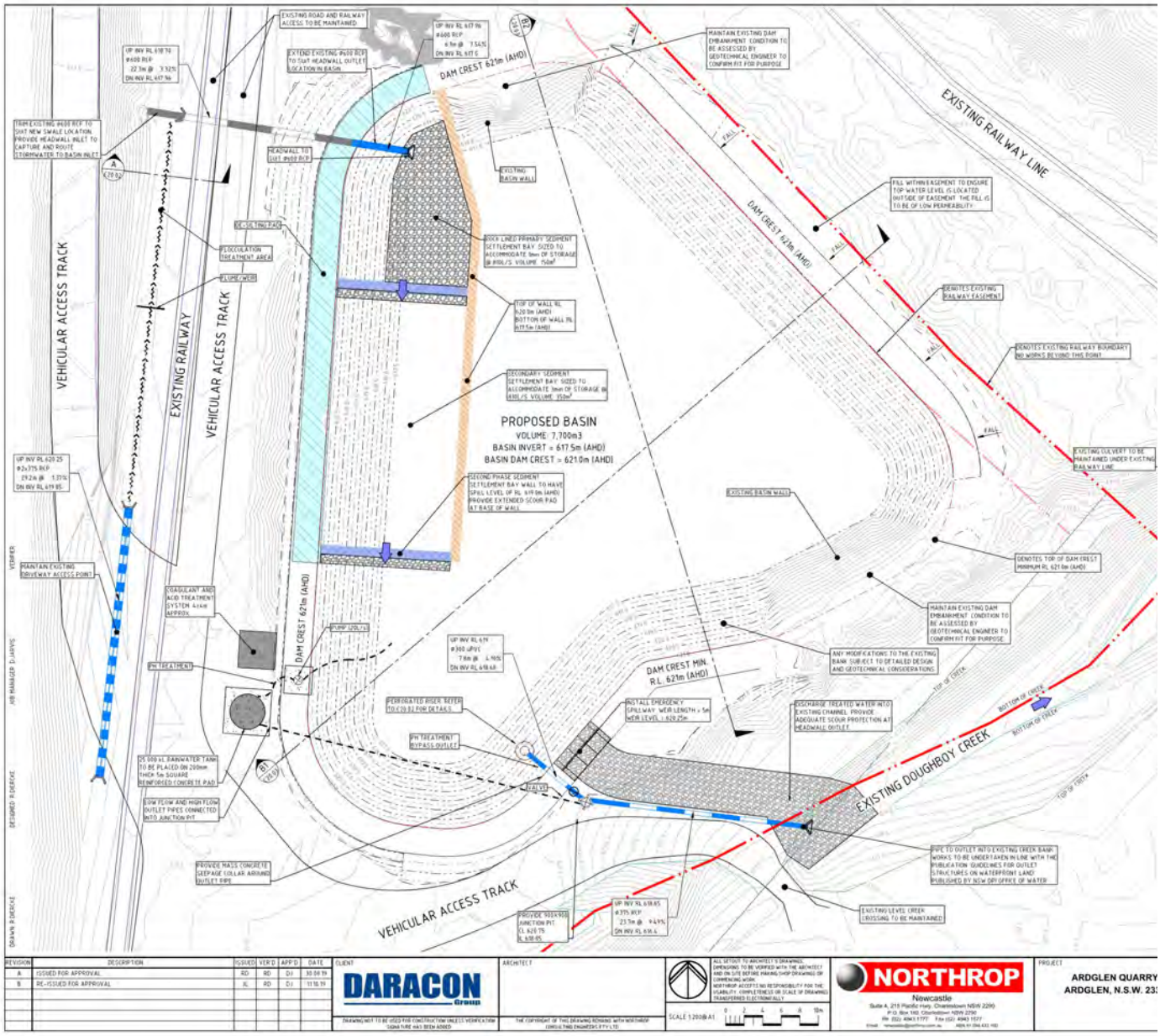
Page 2 of 2

Chris Bonomini

From: John Cannon <John.Cannon@daracon.com.au>
Sent: Friday, 17 February 2023 2:31 PM
To: HV Property Services
Cc: Luke Robinson; John Brown; Mark Robinson; BAR Ardglen Quarry
Subject: RE: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679) - Additional Extension Request.
Attachments: In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms E-1679.pdf; FW: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679); NL140154 _CIVIL_BASIN_REDESIGN.pdf

Hi Sarah,

These works are now ready to go ahead – I would be grateful if we could have a meeting to discuss the works and clarify the requirements we need to get to ARTC. The works are not within the boundary of the ARTC Corridor at all so in my head do not require ARTC Sign off or compliance to ARTC Standards, ARTC Accredited personnel, Protection Officer, ARTC Service Search as such.



Be great to touch base again and refresh and confirm on what ARTC would like to see from us.

Yours faithfully,

John Cannon | Divisional Manager Construction Materials
20 Kullara Close | PO Box 401 Beresfield NSW 2322
p: 02 4974 9200 m: 0429 930 458
John.Cannon@daracon.com.au | www.daracon.com.au

From: John Cannon
Sent: Monday, 14 March 2022 4:49 PM
To: HV Property Services <HVPropertyServices@ARTC.com.au>
Cc: Luke Robinson <Luke.Robinson@daracon.com.au>; John Brown <JBrown@artc.com.au>; Mark Robinson <MRobinson@ARTC.com.au>
Subject: RE: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679) - Additional Extension Request.

Sarah,

Further to previous correspondence we are still progressing planning and preparation works to undertake the upgrades at Ardglen Quarry.

All water monitoring bores have been installed and are now monitored so this will enable works to commence on the extension area in the next 12 months.

If we could please get a further extension to the Agreement in Principle it would be appreciated.

If you have any questions please do not hesitate to contact me.

Yours faithfully,

John Cannon | Divisional Manager Construction Materials
20 Kullara Close | PO Box 401 Beresfield NSW 2322
p: 02 4974 9200 m: 0429 930 458
John.Cannon@daracon.com.au | www.daracon.com.au

From: HV Property Services <HVPropertyServices@ARTC.com.au>
Sent: Monday, 20 September 2021 6:56 PM
To: John Cannon <John.Cannon@daracon.com.au>
Cc: Luke Robinson <Luke.Robinson@daracon.com.au>; John Brown <JBrown@artc.com.au>; Mark Robinson <MRobinson@ARTC.com.au>
Subject: FW: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Afternoon,

Please accept this email as ARTC Consent to grant an extension to the attached Agreement in Principle until 31 March 2022, noting the conditions within the Agreement in Principle have not changed.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

I'M FULLY COVID SAFE VACCINATED

M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation
6 Kings Road
Broadmeadow NSW 2292

artc.com.au

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From: HV Property Services
Sent: Monday, 22 March 2021 11:49 AM
To: John Cannon <John.Cannon@daracon.com.au>
Cc: Luke Robinson <Luke.Robinson@daracon.com.au>; John Brown (JBrown@artc.com.au) <JBrown@artc.com.au>; Mark Robinson (MRobinson@ARTC.com.au) <MRobinson@ARTC.com.au>
Subject: FW: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Morning,

Please accept this email as ARTC Consent to grant an extension to the attached Agreement in Principle until 30 September 2021, noting the conditions within the Agreement in Principle have not changed.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

P. 02 4941 9602
M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation

2 Kings Road
Broadmeadow NSW 2292

artc.com.au

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From: HV Property Services
Sent: Thursday, 24 September 2020 11:21 AM
To: John Cannon <John.Cannon@daracon.com.au>; Luke Robinson <Luke.Robinson@daracon.com.au>
Subject: Extension - In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Morning,

Please accept this email as ARTC Consent to grant an extension to the attached Agreement in Principle until 20 April 2021, noting the conditions within the Agreement in Principle have not changed.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

ARTC

P. 02 4941 9602
M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation
2 Kings Road
Broadmeadow NSW 2292

artc.com.au

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From: Sarah Lawrence
Sent: Tuesday, 21 April 2020 9:15 PM
To: John Cannon <John.Cannon@daracon.com.au>
Subject: In Principle Agreement – Ardglen Quarry – Sediment Basin Upgrade Works – 363.700kms (E-1679)

Hi John,

Please find attached *Agreement in Principle* for proposed Sediment Basin Upgrade Works at Ardglen.

We look forward to receiving documentation in relation to the construction of facilities in due course.

Also note to provide the ARTC reference number (located in the top right hand corner) on your application to avoid further fees and charges. An Invoice will be forwarded to you for payment of this AiP.

Thanks

Sarah

Sarah Lawrence
Property Officer
Hunter Valley

P. 02 4941 9602
M. 0438 149 053
E. SLawrence@ARTC.com.au

Australian Rail Track Corporation
2 Kings Road
Broadmeadow NSW 2292

artc.com.au

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LICENCE

Crown Land Management Act 2016 - Section 2.18

File Reference: 16/07878

Licence Number: RN 638192

MINISTER

The Minister administering the Crown Land Management Act 2016, (hereinafter referred to as the Minister)

grants to

LICENSEE name & address

BUTTAI GRAVEL PTY LIMITED
20 Kullara Cl
BERESFIELD NSW 2322
(hereinafter referred to as the Holder)

a Licence pursuant to the provisions of Section 2.18 of the Crown Land Management Act 2016 in respect of the land described hereunder in Parts 1 and 2 and subject to the terms and conditions contained in the following pages and Schedule 1, and in any additional Schedules or documents referred to in Schedule 1.

EXECUTION

Dated this 8th day of May 2023

THE MINISTER

as delegate of the Minister administering the Crown Land Management Act 2016

Kerrelle Carr Supervisor Tenure Operations - Licences

name and position

THE HOLDER

In consideration of the grant of this Licence I / We agree to be bound by the terms, conditions and provisions of the Licence.

Certified on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: BUTTAI GRAVEL PTY LIMITED

Authority: Section 127 of the Corporation Act 2001

Signature of authorised person:

Name of authorised person: ADAM JOHN KELLY

Office held: DIRECTOR

Signature of authorised person:

Name of authorised person: David Dickson

Office held: SECRETARY

DESCRIPTION OF LANDS

PART 1

Local Govt. Area	LIVERPOOL PLAINS			
County	BUCKLAND			
Parish	TEMI			
Locality	ARDGLEN			
Status:		**Lot**	**Section**	**DP**
Crown land located near		1		DP: 1001734

PART 2

Plan/diagram: Schedule 3	Area: 250m2

TEXT DESCRIPTION: Part of Crown Waterway being DoughBoy Hollow Creek (Reserve 56146 from Sale or Lease Generally, notified 11 May 1923 and Reserve 1011268 for Future Public Requirements, notified 3 February 2006) adjacent to Lot 1 DP 1001734 as shown by red edge in Schedule 3 Diagram.

* * * * * * * * **End of Description of Land** * * * * * * * *

1. Definitions

In this Licence unless the contrary intention appears:

"Act" means the Crown Land Management Act 2016

"Commencement Date" means the date on which this Licence is stated to commence.

"Holder" means the person described as the Holder on the front page of this Licence.

"Improvements" means all buildings structures facilities works and pontoons situated on or in the land or which under the terms of this Licence are to be situated on or in the land.

"Land" means the land specified in Parts 1 and 2 of this Licence under the heading "DESCRIPTION OF LAND" (including any submerged land and waterway) or where the context so admits any part thereof.

"Licence" means this Licence including the Schedules and Annexures hereto.

"Minister" means the Minister referred to on the front page of this Licence as the Minister and where not repugnant to the context includes the Successors of Minister and the servants and agents of the Minister.

"Pontoon" means a floating landing stage.

"Premises" means the Land the Improvements and the Holder's Plant and where the context so permits any part of the foregoing.

"RA" means the Roads Act 1993.

"Rent" means the rent provided for in this Licence.

"Term" means the period commencing on the "Commencement Date" and terminating on the "Termination Date".

"Termination Date" means the date on which the Licence is revoked or ceases to have effect in accordance with the provision of this Licence. (6.002)

2. Plurals and Genders

(a) Words importing the singular number shall include the plural and vice versa.

(b) Words importing the masculine gender shall include the feminine or neuter and vice versa.

(c) Any reference to a person shall be deemed to include a reference to a corporation and vice versa. (6.004)

3. Contra Proferentum

No rules of construction shall apply to the disadvantage of a party on the basis that that party was responsible for the preparation of this Licence or any part of it. (6.005)

4. Headings Plans and Code Numbers

(a) Headings (and subheadings within clauses) marginal notes the matter appearing in Column 1 of Schedule 1 and the Table of Contents have been inserted for guidance only and shall be deemed not to form any part of the Licence.

(b) Any plan or diagram attached or annexed to this licence, which purports to depict the land shall be deemed not to form any part of the licence unless that plan or diagram is referred to in PART 2 in the DESCRIPTION OF LAND.

(c) The code number appearing at the end of each clause of the Licence shall be deemed not to form part of the Licence. (6.006)

5. Clauses and Schedules

References to Clauses Parts and Schedules are references to clauses parts and schedules of this Licence. (6.007)

6. Statutes

(a) A reference to a statute statutory instrument or ordinance includes amendments to that statute statutory instrument or ordinance whether by subsequent statutes statutory instruments or ordinances or otherwise and any statute statutory instrument or ordinance passed in substitution for the statute statutory instrument or ordinance referred to or incorporating any of its provisions.

(b) A reference to a statute includes a reference to any regulation made thereunder. (6.008)

7. Joint and Several Covenants

Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally. (6.009)

8. Severability

Any provision of this Licence which is prohibited or unenforceable in any jurisdiction shall as to such jurisdiction be ineffective to the extent of such prohibition or inability to enforce without invalidating the remaining provisions of such provision in any other jurisdiction. (6.010)

9. Applicable Law

This Licence shall be construed and interpreted in accordance with the law of New South Wales. (6.011)

10. Licence a "Holding" for purposes of the Act

The Holder acknowledges that this Licence is a Holding within the meaning of the Act and the Holder is a Holder within the meaning of the Act and the provisions of the Act relating to holdings and holders apply to this Licence and the Holder. (6.012)

11. Performance of Functions etc

Any power authority duty or function conferred or imposed upon the Minister under this Licence may be exercised or performed by any person authorised by the Minister. (6.013)

12. Authorised Officer

Where under this Licence the Minister is empowered to authorise any person to perform or exercise any power authority duty or function under this Licence such person shall be validly authorised if he is authorised to exercise any power authority duty or function conferred by any Licence granted by the Minister or any Licence of a specified type or any Licence within a specified locality. (6.014)

13. Minister as Public Authority

The Minister and Holder acknowledge that nothing in this Licence can in any way restrict or otherwise affect the Minister's unfettered discretion as to the use of the Minister's statutory powers as a public authority. (6.015)

14. Approval by the Minister

(a) In any case where pursuant to this Licence the doing or executing of any act matter or thing by the Holder is dependent upon the approval or consent of the Minister such approval or consent shall not be effective unless given in writing and may be given or withheld by the Minister in the Minister's absolute discretion and may be given subject to such conditions as the Minister may determine unless otherwise herein provided.

(b) The Holder expressly agrees that any failure to comply with a condition imposed by the Minister will constitute a failure by the Holder to comply with a condition of this Licence. (6.016)

15. Opinion of the Minister

Any opinion to be formed by the Minister for the purposes of this Licence may be formed by the Minister on such grounds and material as the Minister determines to be sufficient after consultation if the Minister deems it necessary with any New South Wales Government Department or other public authority Standards Australia or any other body whose objects and functions are relevant. In forming any such opinion the Minister shall be deemed to be exercising merely administrative functions. (6.017)

16. Holder to pay Cost of Work

Whenever the Holder is required in this Licence to do or effect any act matter or thing then the doing of such act matter or thing shall unless this Licence otherwise provides be at the sole risk cost and expense of the Holder. (6.018)

17. Notices

(a) All notices or communications required to be or which may be given or served by the Minister to or upon the Holder under this Licence or which may be convenient to be given or served in connection with this Licence shall be in writing and shall be sufficiently given or served if left at or sent by ordinary post addressed to the Holder at his address specified in Column 2 of Item 1 of Schedule 1 or at the Premises or at such other place as notified in writing by the Holder to the Minister.

(b) All notices or communications required to be or which may be given or served by the Holder to or upon the Minister under this Licence or which may be convenient to be given or served in connection with this Licence shall be in writing and shall be sufficiently given or served if signed by the Holder or if the Holder is a corporation by the Secretary of the Holder or the person acting as such for the time being and if left at or sent by ordinary post addressed to the person specified in Column 2 of Item 2 of Schedule 1.

(c) Any notice or communication given or served by post shall be deemed to have been duly given or served at the time when it would in the ordinary course be delivered. (6.019)

18. Manner of Payment of Rent and Other Moneys

The rent and other moneys payable in accordance with this Licence shall be paid to the Minister at the address specified in Column 2 of Item 3 of Schedule 1 or to such other person or at such other address as the Minister may from time to time direct by notice in writing served on the Holder. (6.020)

19. Time to be of the Essence

The Minister and the Holder expressly agree that where in any provision of this Licence the Holder is given or allowed a specified time within which to undertake or do any act or thing or any power is conferred or any event occurs after the lapsing of a specified time time shall be the essence of the contract in that regard. (6.021)

20. Whole agreement

The conditions covenants and provisions contained in the Licence expressly or by statutory implication and any provision of the Act which apply to this Licence cover and comprise the whole of the agreement between the parties hereto and it is expressly agreed and declared that no further or other covenants or provisions whether in respect of the Premises or otherwise shall be deemed to be implied herein or to arise between the parties hereto by reason of the invitation by the Minister to the Holder to submit a proposal for the redevelopment of the Premises or any document issued by the Minister prior thereto or by reason of the subsequent negotiations between the parties hereto or by reason or any promise representation warranty or undertaking given or made by any party hereto to another on or prior to the execution hereof or during the Term and the existence of any such implication or collateral or other agreement is hereby negatived. (6.022)

21. Permitted Use

(a) This Licence confers on the Holder a right to occupy the Premises for the purpose specified or referred to in Column 2 of Item 4 in Schedule 1.

(b) The Holder will not use the Premises or allow them to be used for any purpose other than the purpose specified in Column 2 of Item 4 in Schedule 1. (6.023)

22. No Exclusive Possession

The Holder acknowledges that this licence does not confer exclusive Possession of the Premises upon the Holder. (6.023A)

23. Holder not to Commit Nuisance etc

The Holder will not at any time during the Term of this Licence:

(a) carry on or permit to be carried on at the premises any noxious nuisance or offensive trade business.

(b) do or permit to be carried on at the premises any act matter or thing which results in nuisance damage or disturbance to the Minister or owners or occupiers of adjoining or neighbouring lands or buildings.

(c) use the premises for any illegal activity. (6.024)

24. No Residence on Premises

The Holder will not reside or permit any other person to reside on the Premises other than as may be specified or referred to in Column 2 of Item 4A of Schedule 1. (6.025)

25. Commencement and Revocation of Licence

(a) This Licence shall commence on the date specified or referred to in Column 2 of Item 5 of Schedule 1 and shall continue in force until it is revoked in accordance with the provisions of this clause.

(b) The Minister may in his absolute discretion revoke this Licence at any time by serving on the Holder a notice in writing revoking this Licence.

(c) A revocation made under this clause shall take effect on the date specified in the notice or where no date is specified in the notice on the date on which the notice is served on the Holder.

(d) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the revocation of this Licence. (6.027)

26. Licence Granted subject to Aboriginal Land Claim

(a) The Holder is granted this licence subject to a possible Aboriginal Land Claim over this land provided in s36 of the Aboriginal Land Rights Act 1983.

(b) Notwithstanding any other provision of this Licence, this Licence shall terminate or require alteration in the event that the Minister determines that the land is claimable Crown land or a Court determines that the land is claimable Crown land.

(c) Except as may be expressly provided for in this Licence the Holder acknowledges and agrees that the Holder will not be entitled to any compensation costs or damages in respect of the termination or alteration of this Licence by operation of this clause. (6.029C)

27. Transfer upon grant of Aboriginal Land Agreement

(a) Despite anything else in this Licence, the Holder agrees to and approves of the transfer of this Licence as it applies to any or all of this Site (which for the purposes of this clause, includes any access routes associated with use of the Site) without any further notice if an Aboriginal Land Agreement (ALA) within the meaning of section 36AA(1) of the Aboriginal Land Rights Act 1983, affecting the Site or part thereof, provides for the transfer of this Licence as it applies to any or all of this Site.

(b) Except as may be expressly provided for in this Licence, the Holder acknowledges and agrees that the Holder will not be entitled to any compensation, costs or damages in respect of the transfer of this Licence as it applies to any or all of this Site by operation of this clause.

(c) The Holder agrees that the date of transfer under this clause is the date provided for in the ALA, or if it is not so provided, the date the ALA is entered into.

(d) The Minister may give notice to the Holder of the transfer of this Licence as it applies to any or all of this Site under this clause but is not required to do so to effect the transfer. (6.029F)

28. Payment of Rent (CPI)

(a) For the purposes of this clause:

"*Initial Rent*" means the rent specified in Column 2 of Item 11 of Schedule 1.

"*Consumer Price Index number*" has the same meaning given to that term in the Act.

"*CPI Review Date*" means each anniversary date of the Commencement Date.

"*CPI Review Period*" means the period between each CPI Review Date.

"*Due Date*" means each anniversary date of the Commencement Date.

"*Market Rent Review Date*" means the date of the expiration of each period of years as specified in Column 2 of Item 12 of Schedule 1 calculated from the Commencement Date.

"*Market Rent Review Period*" means the period between each Market Rent Review Date.

(b) The Holder covenants with the Minister that the Holder will during the whole of the Term pay to the Minister in accordance with the provisions of this clause without demand free of exchange and without deduction whatsoever the rent hereinafter provided.

(c) The Holder will pay to the Minister on the commencement Date the Initial Rent and thereafter shall pay on each Due Date rent in advance adjusted as hereinafter provided.

(d) (i) On the CPI Review Date the rent shall be adjusted in accordance with the following formula:

$$R = B \times \frac{C}{D}$$

where:

R represents the adjusted rent;

B represents the annual rent payable during the year preceding the CPI Review Date;

C represents the Consumer Price Index number for the last quarter for which such a number was published before the CPI Review Date; and

D represents the Consumer Price Index number for the last quarter for which such a number was published before the immediately preceding CPI Review Date (or if there is no immediately preceding CPI Review Date then the Commencement Date).

(ii) Any rent adjusted under this subclause shall be adjusted to the nearest whole dollar.

(e) In addition to the indexation review provided for in subclause (d) on the first Market Rent Review Date after commencement and thereafter on each Market Rent Review Date the rent may be redetermined by the Minister pursuant to the provisions of Sections 6.5 and 6.7 of the Act.

(f) A redetermination of rent for the purposes of subclause (e) shall be deemed to have been made on the Market Rent Review Date if it is made at any time within the period of six months before the market Rent Review Date.

(g) Where the Minister does not redetermine the rent as provided for in subclause (e) he may redetermine the rent pursuant to the provisions of Sections 6.5 and 6.7 of the Act at any time prior to the next Market Rent Review Date and no succeeding Market Rent Review Date shall be postponed by reason of the operation of this subclause.

(h) Where the Minister does not redetermine the rent on the First Market Rent Review Date or a Market Rent Review Date as provided for in subclause (e) the Holder may by notice in writing served on the Minister require that the Minister redetermine the rent pursuant to the provisions of Sections 6.5 and 6.7 of the Act. Where the Holder requires the Minister to redetermine the rent under this subclause he shall pay on demand the costs of the Minister (or so much of the cost as the Minister may require) in making that determination.

(i) The Holder may object to a redetermination of rent under Section 6.8 of the Act. A redetermination of rent as provided for in subclauses (e) (g) and (h) shall take effect and be due and payable from the date of issue of the notice of redetermination under Section 6.7 of the Act, even if an objection under that Section 6.8 has been lodged. On the completion of the objection process any necessary adjustments shall be made.

(j) A redetermination of rent made before its relevant Market Rent Review Date as provided for in subclause (f) shall take effect from the relevant Market Rent Review Date even if an objection under Section 6.8 of the Act has been lodged. On the completion of the objection process any necessary adjustments shall be made.

(k) The Holder acknowledges that the Minister may make a direction under Section 12.16 of the Act in respect of any rent payable under this Licence. (6.031)

29. Continuing Obligation

The obligation of the Holder to pay the Rent shall be a continuing one during the term of this Licence and shall not abate in whole or in part or be affected by any cause whatsoever. (6.037)

30. Holder to Pay Rates etc

The Holder will when the same become due for payment pay all (or in the first and last year of the term of this Licence the appropriate proportionate part) rates taxes (including Land Tax) assessments duties charges and fees whether municipal local government parliamentary or otherwise which are at any time during the currency of this Licence lawfully charged upon imposed or levied in respect of the Premises or on the Minister or the Holder on account thereof and will if required by the Minister produce to the Minister the receipts for such payments within ten business days after the respective due dates for payment AND in case such rates taxes duties and fees so covenanted to be paid by the Holder are not paid when the same shall become due the Minister may if the Minister thinks fit pay the same and any such sum or sums so paid may be recovered by the Minister as if such sums were rent in arrears. (6.039)

31. Holder to Pay Other Charges

The Holder will pay all other fees charges and impositions which are at any time during the Term payable in respect of the Premises or on account of the use and occupation of the Premises by the Holder. (6.040)

32. Goods and Services Tax

(a) Definitions

In this clause the expressions "GST", "supply", and "taxable supply" have the meanings given to those expressions in the A New Tax System (Goods and Services Tax) Act 1999.

(b) Amounts GST Exclusive

With the exception of any amount payable under this clause, unless otherwise expressly stated all amounts stated to be payable under this Licence are exclusive of GST.

(c) Responsibility for GST

(i) Despite any other provision in this Licence, if GST is imposed on any supply made under this Licence, the recipient must pay to the supplier an amount equal to the GST payable on the taxable supply.

(ii) The recipient must pay the amount referred to in subclause (c)(i) in addition to and at the time payment for the taxable supply is required to be made under this Licence.

(d) Valuer/Umpire to return GST Exclusive Value

Any valuer or umpire returning a valuation must return a GST exclusive market value for it in any case where the valuation is for the purpose of determining a supply value to which GST is to be added under this Licence. (6.040A)

33. Holder to Pay for Services

The Holder will as and when the same become due for payment pay to the Minister or to any other person or body authorised to supply the same all proper charges for gas electricity water or other services supplied to or consumed in or on the Premises and will also pay all charges in respect of any telephone services connected to the Premises. (6.041)

34. Holder not to Impose Liability on Minister

Subject to any other provision of this Licence the Holder will not without the written consent of the Minister by any act matter or deed or by failure or omission cause or permit to be imposed on the Minister any liability of the Holder under or by virtue of this Licence. (6.042)

35. Holder not to undertake development without consent notwithstanding any other provision of this Licence

The Holder will not undertake any development within the meaning of the Environmental Planning and Assessment Act 1979 contrary to the provisions of that Act or in breach of any restriction condition or prohibition imposed by an Environmental Planning Instrument or condition of a development consent. (6.043)

36. Development Consent

The Holder will not undertake any activity on or within the Premises for which consent is required under the Environmental Planning and Assessment Act 1979 or any Instrument made thereunder without first obtaining such consent and in accordance with any condition or requirement of that consent. (6.044)

37. Compliance with Statutes

(a) The Holder will comply with the requirements of all statutes regulations or by-laws and requirements of all relevant public and local authorities in so far as they apply in relation to the use and occupation of the premises.

(b) The Holder will forthwith on being served with a notice by the Minister comply with any notice or direction served on the Minister by a competent authority relating to the destruction of noxious animals or plants or pests or the carrying out of repairs alterations or works on or to the Premises. (6.045)

38. Holder not to deal with Licence or part with possession of Premises

Subject to any other provision of this Licence the Holder will not during the Term of this Licence transfer or create any interest in the Licence or authorise or permit any person to occupy the Premises. (6.047)

39. Revocation on the Request of the Holder

The Holder may at any time by notice served on the Minister request that this Licence be revoked and the Minister if he is satisfied that the Holder has complied with the conditions and provisions of this Licence or the Act will as soon as practicable comply with such a request. (6.051)

40. Interest on Overdue Money

The Holder shall pay interest on any money due and payable under this Licence to the Minister at the rate prescribed from time to time under the provisions of Section 12.12 of the Act and any such interest shall for the purposes of this Licence be deemed to be Rent in arrears. (6.052)

41. Failure to pay money or Undertake Works

(a) Where under this Licence the Holder is required to pay any money to a third party and neglects to do so for a period of 14 days after the money became due and payable it shall be lawful for but not obligatory upon the Minister (and without prejudice to any rights and powers arising from such default) to pay such money as if it were the Holder and the Holder will reimburse the Minister in respect of any such payments on demand.

(b) Where under this Licence the Holder is required to do or cause to be done any work or thing and the Holder neglects to do the work or thing for a period of 14 days after that work or thing was due or required to be done it shall be lawful for but not obligatory upon the Minister (and without prejudice to any rights and powers arising from such default) to do or effect such work or thing as if the Minister were the Holder and for that purpose the Minister the Minister's officers agents contractors and workmen may enter upon the whole or any part of the Premises and there remain for the purposes of doing or effecting any such work or thing and the Holder will reimburse the Minister for the cost of the doing or effecting the work or thing on demand. For the purposes of this clause the word cost shall include any sums paid for any insurance indemnities under the laws relating to workers compensation.

(c) The Holder expressly agrees that any money or cost payable to the Minister under this clause shall constitute a debt owed by the Holder to the Minister and may be recovered by the Minister accordingly.

(d) Where the Premises has a common boundary with other land owned leased or held by the Holder (hereinafter called the "other land"). The Holder irrevocably grants to the Minister the Minister's officers agents contractors and workmen a licence to enter upon the said other land for the purpose of gaining access to the Premises or for the purpose of undertaking any work or thing authorised permitted or contemplated by this Clause.

In exercising any power conferred by this subclause the Minister the Minister's servants employees and agents will not be liable for any reasonable damage suffered or occasioned to the other land or anything constructed thereon.

(e) The Holder expressly agrees that the provisions of this clause shall continue after the expiration or sooner determination of this Licence and the Minister may make any payment or effect any work or thing authorised by this clause after the expiration or sooner determination of this Licence as if such expiration or sooner determination had not taken place. (6.053)

42. Release of the Minister from Liability

(a) For the purposes of this clause the term Minister shall include Her Majesty The Queen Her Heirs and Successors the State of New South Wales the Minister and the agents servants employees and contractors of the Minister Her Majesty Her Majesty's Heirs and Successors the State of New South Wales and the Minister.

(b) The holder agrees to occupy use and keep the Premises at the risk of the Holder and hereby releases to the full extent permitted by law the Minister from all claims and demands of every kind resulting from any accident damage or injury occurring therein and the Holder EXPRESSLY AGREES that the Minister shall have no responsibility or liability for any loss of or damage to fixtures and/or personal property of the Holder or any agent or servant of the Holder or of any member of the public whilst in or upon the Premises.

(c) The Holder expressly agrees that the obligations of the Holder under this clause shall continue after the expiration or other determination of this Licence in respect of any act deed matter or thing happening before such expiration or determination. (6.055)

43. Indemnities

(a) For the purposes of this clause the term Minister shall include Her Majesty the Queen Her Heirs and Successors the State of New South Wales the Minister and the agents servants employees and contractors of Her Majesty Her Majesty's Heirs and Successors the State of New South Wales and the Minister.

(b) The Holder agrees that the Holder will indemnify and keep indemnified the Minister from and against all actions suits claims demands proceedings losses damages compensation sums of money costs legal costs charges and expenses whatsoever to which the Minister shall or may be or become liable for or in respect of the Premises or the occupation operation and use of the Premises or for or in respect of all losses damages accidents or injuries of whatsoever nature or kind and howsoever sustained or occasioned (and whether to any property or to any person or resulting in the destruction of any property or the death of any person or not) at or upon the Premises or originating on the Premises although occurring or sustained outside the same except to the extent that any such claims and demands arise wholly from the negligence or wilful act or omission on the part of the Minister.

(c) Notwithstanding that any of such actions suits claims demands proceedings losses damages compensation sums of money costs charges and expenses shall have resulted from any act or thing which the Holder may be authorised or obliged to do under these presents AND notwithstanding that at any time waiver or other indulgence had been given to the Holder in respect of any obligation of the Holder under this Licence and without limiting the generality of the preceding subclause (b) the Holder agrees that the Holder will indemnify and keep indemnified the Minister from and against all actions claims demands proceedings loss damage costs and expenses incurred by the Minister or for which the Minister may become liable in respect of or arising from:

(i) the negligent use misuse waste or abuse by the Holder or any servant agent tenant sub-tenant or occupier of the Holder or any person claiming through or under the Holder of the gas electricity water sewerage or other services and facilities of the Premises or arising from any faulty fitting or fixture in the Premises;

(ii) overflow or leakage of water (including rain water) in or from the Premises or having origin within the Premises or caused or contributed to by any act or omission on the part of the Holder its servants agents tenants occupiers or other persons claiming through or under the Holder;

(iii) loss damage or injury from any cause whatsoever to property or persons within or outside the Premises and whether lawfully there or not caused or contributed to by the use of the Premises by the Holder or any servant agent tenant sub-tenant occupier or other person claiming through or under the Holder or caused or contributed to by any act omission neglect breach or default of the Holder or any person aforesaid within or on the Premises; and

(iv) loss damage or injury to property or persons within or without the Premises and whether lawfully there or not caused by the malfunction or failure to function of air conditioning or elevators or other machinery installed in or on the Premises.

(d) The Holder expressly agrees that the obligations of the Holder under this clause shall continue after the expiration or other determination of this Licence in respect of any act deed matter or thing happening before such expiration or determination. (6.056)

44. Insurance - Public Risk

The Holder will (without in any way limiting the liability of the Holder under any other provision of this Licence) forthwith take out and thereafter during the Term keep current a public risk insurance policy for the amount specified in Column 2 of Item 19 of Schedule 1 for any one claim (or such other reasonable amount as the Minister may from time to time specify in writing to the Holder) whereby the Minister shall during the continuance of this Licence be indemnified against claims and demands of every kind arising from death or bodily injury or damage to property arising out of the Holder's use of the Premises. (6.057)

45. Provisions Re Policies

(a) The following provisions apply to all policies of insurance required to be effected by the Holder under this Licence:

(i) Where the Minister serves a notice on the Holder directing the Holder to enter into a policy with an insurer approved by the Minister the policy is to be entered into with an insurer approved by the Minister. The Minister shall specify a list of approved insurers in any notice served under this paragraph. Where the Minister does not serve a notice as provided for in this paragraph policies of insurance shall be entered into with an insurer carrying on business in Australia.

(ii) Where a provision of this Licence specifies an amount for which a policy is to be entered into for (or makes provision for such an amount to be specified) then the policy shall be entered into for the amount specified. Where a provision does not specify the amount for which a policy is to be entered into for the policy shall be entered into for an amount sufficient to cover the risks likely to be encountered having regard to the type of activity undertaken on the Premises and the nature of the Premises.

(iii) All policies are to contain conditions and exclusions commonly effected in relation to the type of activity undertaken on the Premises and the nature of the Premises provided that the Minister may by notice served on the Holder direct the Holder to enter into a policy containing specified provisions or which does not contain specified provisions or exclusions and the Holder shall use his best endeavours to comply with the direction.

(iv) All policies are to be taken out in the names of the Minister and the Holder for their respective rights and interests and in the name of such other parties having an insurable interest as the Minister may require.

(v) Duplicate or certified copies of the policies and all renewal certificates and endorsement slips are to be lodged by the Holder with the Minister if required by the Minister.

(vi) All premiums payable in respect of policies and renewals of policies are to be paid punctually by the Holder and the receipt for each premium payable in respect of each policy (or other proof of payment to the Minister's satisfaction) is to be produced by the Holder to the Minister at the request of the Minister.

(vii) Where the Minister has served a notice on the Holder under paragraph (i) the Holder will use all reasonable endeavours to ensure that the insurer which issues a policy advises the Minister of any failure by the Holder to renew any policy or pay any premium in respect thereof.

(viii) The Holder will not at any time during the Term do or bring upon the Premises anything whereby any insurance relating to the Premises against damage by fire and other risks may be rendered void or voidable. If the Holder does or brings anything upon the Premises whereby the premium on the insurance shall be liable to be increased the Holder will obtain insurance cover for the increased risk and pay all additional premiums (if any) required to be paid.

(ix) The Holder will use all reasonable endeavours to ensure that full true and particular information is given to the insurer with which the insurances are effected of all matters and things the non-disclosure of which might in any way prejudice or affect any policy of insurance or the payment of all or any moneys thereunder.

(b) The Minister in his own name or as the attorney of the Holder in the name of the Holder shall be entitled to institute all proceedings against any insurer which issues a policy of insurance required by this Licence to recover from it any amount for loss damage or injury or other money payable under any indemnity in favour of the Minister. The Holder hereby appoints the Minister the attorney of the Holder for the purpose as aforesaid.

(c) The Holder expressly agrees that the provisions of subclause (b) continue in force after the Termination Date. (6.065)

46. Construction Of Improvements

(a) For the purposes of this clause "Improvement" means any building structure facility work or pontoon.

(b) The Holder may construct effect erect or undertake any of the Improvements specified or referred to in Column 2 of Item 20 of Schedule 1.

(c) Any Improvements constructed erected effected or undertaken shall be constructed erected effected or undertaken in accordance with the plans conditions and specifications contained or referred to in Column 2 of Item 21 of Schedule 1.

(d) The Holder will not construct effect erect or undertake any Improvements on the Premises other than the Improvements specified or referred to in Column 2 of Item 20 of Schedule 1 or which may be authorised or required under any other provision of this Licence. (6.068)

47. Improvements - No demolition without Consent

(a) For the purposes of this clause "Improvement" means any building structure facility work or pontoon.

(b) The Holder will not demolish destroy remove take away or pull down any Improvements on the Premises without the written consent of the Minister. (6.070)

48. Ownership of Improvements the Act

The Holder acknowledges that the provisions of section 7.16 of the Act apply. (6.074)

49. Ownership of Improvements

(a) For the purposes of this clause "Improvement" means any building structure facility work or pontoon.

(b) The Holder expressly acknowledges that any Improvement constructed erected effected or undertaken on the Premises during the Term shall forthwith become the property of the Minister and the Holder will not be entitled to any compensation in respect thereof. (6.075)

50. General Requirement to repair

Without prejudice to the specific obligations contained in this Licence the Holder will to the satisfaction of the Minister at all times during the Term keep all Improvements now erected or hereafter to be erected on the Land in good repair and properly maintained in all respects. (6.083)

51. Premises to be kept in clean and tidy condition

The Holder will at all times during the Term keep the Premises in a clean and tidy condition and will (subject to any other provision of this Licence) on the Termination Date leave the Premises in a clean and tidy condition. (6.088)

52. Holder May Repair Improvements

(a) For the purpose of this clause "Repair" means to replace part of an Improvement with material of a similar type and size but not so as to enlarge or significantly alter the appearance or structure of the Improvement.

(b) The Holder may from time to time at the Holder's own expense Repair the Improvement.

(c) The Holder shall not undertake any work upon an Improvement which does not involve the painting of the Improvement or is not a Repair as defined in this clause. (6.088A)

53. Minister's Right to Enter Inspect and Repair

The Minister and the Minister's agents may at all reasonable times upon giving to the Holder reasonable notice (except in the case of emergency when no notice shall be required) enter upon the Premises and view the state of repair thereof and may serve upon the Holder a notice in writing of any defect (the repair of which is the Holder's obligation hereunder) requiring the Holder within fourteen days to repair the same. (6.090)

54. Breakages

The Holder will immediately at the Holder's expense make good any breakage defect or damage to the Improvements (including but not limited to broken glass) or to any adjoining premises or to any facility or appurtenance of the Minister occasioned by want of care misuse or abuse on the part of the Holder or the Holders sub-tenants or other persons claiming through or under the Holder or otherwise occasioned by any breach or default of the Holder hereunder. (6.096)

55. Carrying out of Alterations

(a) The Holder will not make or undertake any alterations to the Premises unless full and proper plans and specifications shall have been previously submitted to and approved by the Minister in writing and all work in connection thereto shall be carried out by and at the expense of the Holder and to the satisfaction of the Minister using contractors or workmen previously approved by the Minister whose approval shall not be unreasonably withheld and subject thereto the Holder will observe and comply with:

(i) all requirements of the Minister the Local Council and any other statutory authority having jurisdiction over the Premises; and

(ii) the plans and specifications approved by the Minister the Council and any other statutory authority.

(b) The Minister may appoint such consultants as it may reasonably deem proper to inspect any work undertaken by the Holder pursuant to this clause and the Holder will comply with the reasonable directions of such consultants and shall pay the whole of their fees charges and expenses in relation thereto. (6.101)

56. Soil Conservation Act

The Holder will comply with the provisions of the Soil Conservation Act 1938. (6.116)

57. Minister not liable to provide Access

The Holder acknowledges that the Minister is not liable to provide access to the Premises over other land held by the Minister or any other land. (6.121)

58. Exterior Signs

The Holder will not without the consent of the Minister erect paint display affix or exhibit upon the exterior of the Premises or upon the interior of the Premises so as to be visible from the outside of the Premises any signs advertisements lights embellishments names notices or hoarding. (6.189)

59. Holder not to remove Materials

(a) The Holder will not mine remove extract dig up or excavate any sand stone gravel clay loam shell or similar substance or permit any other person to undertake any such action without the prior consent in writing of the Minister and subject to such conditions as the Minister may determine.

(b) Subclause (a) shall not apply to any removal digging up or excavation as may be necessary to construct or undertake any improvement authorised by or under this Licence provided that any such removal digging up or excavation is undertaken in accordance with the requirements of that authority.

(c) The Minister and the Holder expressly agree that a failure by the Holder to comply with any condition imposed pursuant to subclause (a) shall constitute a failure by the Holder to comply with a provision or covenant of this Licence. (6.194)

60. Minister May Grant Licences to Extract Material

(a) The Minister may during the Term grant a Licence to any person over the land specified in Column 2 of Item 66 of Schedule 1 to mine remove extract dig up or excavate any sand stone gravel clay loam shell or similar substances.

(b) Upon the grant of a Licence under this clause the Holder will be entitled to the compensation specified in Column 2 of Item 67 of Schedule 1.

(c) The Holder agrees that he will not hinder interfere or prevent any person authorised under this clause from entering upon the Premises together with such servants employees agents or contractors and equipment as may be necessary in exercising the rights conferred on him by any Licence authorised to be granted under this clause.

(d) The Minister may authorise any person (hereinafter called "the Licencee") who is granted a licence in accordance with the provisions of subclause (a) to construct such gates roads bridges and other works as may be necessary and the Holder will not hinder the Licencee in undertaking such work. (6.195)

61. No liability for Failure of Services

The Minister will not be under any liability for any loss injury or damage sustained by the Holder or any other person at any time as a result of or arising in any way out of the failure of the electricity telephones gas or water supply sewerage drainage or any other services or facilities provided by the Minister or enjoyed by the Holder in conjunction with the Premises or this Licence provided that such failure is not due to the wilful act or wilful omission of the Minister. (6.198)

62. Holder to Yield Up

The Holder will forthwith upon the revocation of this Licence peaceably surrender and yield up to the Minister the Premises in good condition reasonable wear and tear excepted together with all conveniences amenities and appurtenances relating thereto clear and free from rubbish and in good and substantial repair order and condition in every case having regard to the age of what is being surrendered or yielded up. (6.199)

63. No Right to Purchase etc

The Holder expressly acknowledges that the grant of this Licence does not confer a right to purchase the land or to the grant of a lease or to the grant of a further licence. (6.200)

64. Special Conditions

The special conditions specified or referred to in Column 2 of Item 71 of Schedule 1 shall be deemed to be conditions and provisions of this Licence. (6.201)

******** **End of Licence Clauses** ********

Schedule 1

Item	Column 1 (description of variable particulars)	Column 2 (particulars)
1	Holder's Address for service of notices	PO Box 401 BERESFIELD NSW 2322
2	Minister's Address for service of notices	Department of Planning and Environment - Crown Lands PO Box 2185 DANGAR NSW 2309
3	Address for payment of rent	Department of Planning and Environment - Crown Lands PO Box 2155 Dangar NSW 2309
4	Purpose for which Premises may be used	Drainage Channel (1)
4A	No Residence on Premises	No residence
5	Commencement Date	The date specified on page 1 of the Licence being the date of the execution of the Licence.
11	Initial Rent	$566.00
12	Market Rent Review Period	3 years
19	Insurance - Public Risk	$20 Million
20	Improvements that may be constructed	As per SSD MP06_0264 - MOD - 2
21	Improvements - plans conditions and specifications	As per SSD MP06_0264 - MOD - 2
66	Land over which Licence to extract Materials may be granted	Whole
67	Compensation in the event that Licence to extract Material is granted	Nil
71	Special conditions or provisions	Annexed as Schedule 2

******** **End of Schedule 1** ********

Schedule 2

ADDITIONAL TERMS AND CONDITIONS

1. Native Title*

Native title under the *Native Title Act 1993 (Cth) ("**NTA**")* may exist with respect to the Land.
To the extent that the Holder is permitted to do something under this Licence, then the Holder's right to do the activity prevails over any native title rights and interests and the existence of those native title rights do not prevent the Holder from doing the activity.
In such a case, if the act is wholly inconsistent with the continued existence, enjoyment or exercise of the native title rights and interests, that native title continues to exist in its entirety but the rights and interests have no effect in relation to the act.
For some activities under the Licence, you must first obtain the Minister's Consent. In those cases, the Minister may only be able to consent to those acts if that consent can be given in accordance with the *NTA*.
*These notes do not form part of this Licence's terms and conditions.

2. Relics

(a) Unless authorised to do so by an Aboriginal Heritage Impact Permit under Section 90 of the National Parks and Wildlife Act 1974 and subject to observance and compliance with any conditions imposed on the grant of such permit the Holder will not knowingly disturb destroy deface or damage any Aboriginal object or place or other item of archaeological significance within the land and shall take every precaution in drilling excavating or carrying out other operations or works in the Land against any such disturbance destruction defacement or damage.

(b) If the Holder becomes aware of any Aboriginal object, place or other item of archaeological significance within the Land the Holder will within 24 hours notify Heritage NSW of the existence of such object, place or item.

(c) The Holder will not continue any operations or works on the Land likely to interfere with or disturb any object, place or item referred to in subclause (b) without the approval of Heritage NSW and the Holder will observe and comply with all reasonable requirements of Heritage NSW in relation to the carrying out of the operations or works.

3. Artefacts

All fossils artefacts coins articles of value articles of antiquity structure and other remains or things of geological historical or archaeological interest discovered on or under the surface of the Premises shall as between the Minister and the Holder be deemed to be the absolute property of the Minister and the Holder will as authorised by the Minister watch or examine any excavations and the Holder will take every precaution to prevent such articles or things being removed or damaged and shall immediately upon discovery thereof notify the Minister of such discovery and carry out at the reasonable expense of the Holder the Minister's orders as to the delivery up or disposal of such articles or things.

4. Water Quality Testing Results

Supply or provide access upon request to the Department the results of routine water quality testing at discharge location and structural reports on infrastructure impacting Crown waterway.

5. Monitor and Maintain Infrastructure

Monitor and maintain infrastructure to ensure discharge of water into the Crown waterway does not impact stability of bank or bed of Doughboy Hollow Creek.

6. Modifications

Ensure any necessary modifications to streambank do not remove any natural meanders or straighten

channel.

7. **Native Vegetation**

Establish or promote native vegetation within licence area.

8. **Weeds**

Control environmental weeds within the project area, including woody weeds.

Schedule 3

Licence 638192

Legend

- Crown Tenure
- Lot
- Unidentified
- Road
- Water Feature

Crown Account Details

Parish: TEMI
County: BUCKLAND
LGA: LIVERPOOL PLAINS
Suburb: ARDGLEN

Author: DPI\ambled01
Map Created: 24/11/2022 4:29:56 PM

NSW GOVERNMENT

N

0 11 23 34 46 m
Scale 1: 1128

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

Disclaimer: Scale is not accurate. Crown Lands must not be liable for any loss or damage (including loss of profits, business, revenue or data) whether in contract, tort (including negligence) or otherwise arising from or in connection with any defect, error or inaccuracy of information or any part thereof or any products or services.

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* * * * * * * * **End of Schedule 3** * * * * * * * *

APPENDIX 5 Noise Management Plan

Noise Management Plan

Project Name	Ardglen Quarry
Job No.	BAR
Client	Various
Contract No.	N/A

Document No. 1
Holder: DARACON / Client

Revision	Date	Prepared By	Reviewed By Quarry Manager	Authorised By Systems Manager	
				Name	Sign
07	12/11/21	Luke Robinson	Paul Walker	Luke Robinson	

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1. INTRODUCTION

Ardglen Quarry (the Quarry) is located on Lot 218 DP 751028, Lot 1 DP 1001734, Lot 187 DP 751028, Lot 39 DP 751028 and Lot 49 DP 751028, adjacent to the small rural community of Ardglen. Ardglen is approximately 5 kilometres (km) northwest of Murrurundi and 60 km southwest of Tamworth. The Quarry is owned and operated by Buttai Gravel Pty Ltd (trading as Daracon Quarries).

NSW Railways owned and operated the Quarry for over 100 years prior to the purchase by Daracon. In 2008 Daracon was granted approval under Part 3A of the Environmental Planning & Assessment Act 1979, to extend quarrying activities into the adjacent lot west of the existing operation, Lot 218 DP 751028. In December 2010 Daracon was granted approval for a modification to the Project Approval (Mod 1) and most recently in March 2021 approval was granted for a second modification to the Project Approval (Mod 2) (the Approval.

The Approval permits:

- the extraction and processing of up to 500,000 (tpa) of material
- transport of a combined total 500,000 tonnes/year of quarrying products from the site by road and/or rail by either:
- transport of 250,000 (tpa)of quarrying products from the site by rail
- transport of 500,000 (tpa) of quarrying products from the site by road
- Installation of noise management measures including barriers/bunds
- Modify the sediment basin, in pit sump and water treatment measures
- import of up to 80,000 tonnes/year for blending with quarried materials

The following Noise Management Plan (NMP) details the measures required to mitigate the environmental effect of noise from the above activities on our neighbours. It also details the noise monitoring programs to assess and report the levels of impact, in compliance with Schedule 3 of the Approval and provides a mechanism whereby any noise complaints can be dealt with quickly and effectively.

This document has been prepared to satisfy the requirements of Schedule 3, Condition 6 of the Approval.

2. OBJECTIVES OF NOISE MANAGEMENT PLAN

The purpose of this plan, in conjunction with the use of other environmental control documents associated with the operation of Ardglen Quarry is to ensure that Daracon Group fulfils its legal, contractual and social obligations by:

- Employing best practice environmental planning methodologies;
- Constructing and/or incorporating within the works appropriate environmental control measures;
- Providing relevant training to all personnel involved in environmental aspects (including site induction, specific environmental aspects, toolbox talks);
- Identifies sources of noise and vibration on construction sites;
- Outline site-specific feasible and reasonable work practices to guide day to day planning of quarrying operations and minimise noise impacts;
- Identifying and alerting sensitive receivers to any adverse noise and vibration impacts that may occur;

This Noise Management Plan (NMP) has been prepared to satisfy the requirements of the Approval and the Environmental Protection Licence (EPL #1115) associated with the Ardglen Quarry operations.

In addition to meeting the specific performance measures and criteria in this Approval, we also commit to implementing all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this Approval.

Additionally, we commit to applying existing management strategies plans or programs until the approval of a similar plan following the determination of the Approval.

3. LEGAL AND OTHER REQUIREMENTS

Daracon Group has an obligation under the provisions of the POEO Act to protect the environment and minimise noise impacts. Accordingly, it is a requirement of consent, as per the Approval and EPL #1115 that a program of environmental controls pertaining to the management of noise impacts be planned, documented implemented and monitored for Ardglen Quarry.

3.1 Project Approval

Table 1 below outlines the relevant noise conditions from the Approval for this NMP and where they have been addressed within the NMP.

Table 1 – Regulatory Requirements

<table>
<tr><th>Condition</th><th>Description</th><th>Section(s) Addressed</th></tr>
<tr><td colspan="3">Hours of Operation</td></tr>
<tr><td>Schedule 3 Condition 1</td><td>The Applicant must comply with the hours of operation in Table 1.</td><td rowspan="2">Section 5 & Section 6</td></tr>
<tr><td></td><td>
Table 1: Hours of Operation
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td rowspan="2">Topsoil/overburden removal/emplacement</td><td>Monday-Saturday</td><td>7.00am to 5.00pr</td></tr>
<tr><td>Sunday</td><td>None</td></tr>
<tr><td rowspan="2">Blasting</td><td>Monday-Friday</td><td>10:00am to 3.00p</td></tr>
<tr><td>Saturdays, Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">In-pit activities (including drilling, extraction, and transfer of material out of the pit)</td><td>Monday-Saturday</td><td>7.00am to 5:30pr</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">Out-of-pit activities (including processing, and stockpiling)</td><td>Monday-Saturday</td><td>7.00am to 5:30pr</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Maintenance (if inaudible at nearby residences)</td><td>Monday-Sunday</td><td>Any time</td></tr>
<tr><td rowspan="2">Truck loading and distribution</td><td>Monday-Saturday</td><td>6.30am to 5.30pr</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Rail loading</td><td>Monday-Sunday</td><td>7:00am to 10:00p</td></tr>
</table>
</td></tr>
<tr><td></td><td>Note:
• The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41).
• The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast.</td><td></td></tr>
</table>

Condition	Description	Section(s) Addressed
Noise		
Noise Impact Assessment Criteria		
Schedule 3 Condition 2	The Applicant must ensure that the combined construction and operational noise generated by the development does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land, except where construction works are authorised under a Construction Noise Protocol which has been approved by the Planning Secretary under condition 4A of this Schedule.	Section 7

Table 2: Noise impact assessment criteria dB(A)

Land	Day	Evening	Night	
	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1}$
4	44	35	35	45
5, 6	45	35	35	45
9	37	35	35	45

Table 2: Noise impact assessment criteria dB(A)

Table 2: Noise impact assessment criteria dB(A) Continued

Land	Day	Evening	Night	
	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	L_{A1}
10	38	35	35	4
12, 14	36	35	35	4
15	43	35	35	4
16	40	35	35	4
All other privately-owned land	35	35	35	4

However, if the Applicant has a written negotiated noise agreement with any landowner of the land listed in Table 2, and a copy of this agreement has been forwarded to the Department and EPA, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement. The Applicant may also exceed the LA1(1 min) and LAeq(15 min) noise impact assessment criteria during out of hours rail loading activities provided they are conducted in accordance with condition 41 below.

Condition	Description	Section(s) Addressed
	Notes: • For information on the numbering and identification of properties used in this approval see Appendix 5. • Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy (EPA, 2000). Appendix 6 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.	
Schedule 3 Condition 3	The Applicant must undertake all construction work within standard construction hours (7.00am to 6.00 pm Monday to Friday and 8.00am to 1.00pm Saturday, excluding Sundays and Public Holidays).	Section 8
Schedule 3 Condition 4	The Applicant must ensure that combined construction and operational noise generated by the development does not exceed the limits outlined in Table 2 of this Schedule, except where:	Section 8
	(a) the Applicant has a written negotiated agreement with the owner(s) of the relevant residence/land as outlined in condition 2 of this Schedule; or	
	(b) an alternative temporary limit has been approved by the Planning Secretary for specific construction works or for a fixed period of time.	Section 8
Schedule 3 Condition 4A	In order to seek an alternative temporary construction noise limit under condition 4(b) of this Schedule, the Applicant must submit a Construction Noise Protocol to the Planning Secretary for approval, prior to undertaking the nominated construction works. This protocol must:	Section 8
	(a) be prepared in consultation with the EPA and any landowners who may be affected by noise generated by the nominated construction works; and	
	(b) address the relevant requirements of the Interim Construction Noise Guideline (DECC 2009).	Section 8
Schedule 3 Condition 4B	The Applicant must implement any Construction Noise Protocol as approved by the Planning Secretary.	Section 8
Operating Conditions		

Condition	Description	Section(s) Addressed
Schedule 3 Condition 4C	The Applicant must:	Section 9 and 10
	(a) take all reasonable steps to minimise noise from construction and operational activities, including low frequency noise and other audible characteristics, as well as road noise associated with the development;	
	(b) operate a noise management system to guide day to day planning of quarrying operations and implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent;	Section 10
	(c) take all reasonable steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions, particularly when the noise criteria in this consent do not apply (see Appendix 6);	Section 10
	(d) carry out regular noise monitoring (at least once a month while quarrying operations are being carried out, unless otherwise agreed by the Planning Secretary) to determine whether the development is complying with the relevant conditions of this consent; and	Section 9
	(e) regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	Section 9
Schedule 3 Condition 4D	Prior to carrying out any processing activities under this consent, the Applicant must implement the recommended noise mitigation measures as outlined in the MOD 2 EA to the satisfaction of the Planning Secretary.	Section 10
Schedule 3 Condition 4E	The Applicant must not operate processing equipment while undertaking:	Section 10.1
	(a) rail loading; and/or	
	(b) topsoil/overburden removal or emplacement.	Section 10.1
Continuous Improvement		
Schedule 3 Condition 5	The Applicant must:	Section 10.5
	(a) investigate ways to reduce the noise generated by the development, including off-site road and rail noise and maximum noise levels which may result in sleep disturbance; and	
	(b) report on these investigations and the implementation and effectiveness of these measures in the Annual Review, to the satisfaction of the Planning Secretary.	Section 10.5

Condition	Description	Section(s) Addressed
Monitoring		
Schedule 3 Condition 6	The Applicant must prepare a Noise Monitoring Program for the development in consultation with EPA and to the satisfaction of the Planning Secretary. The program must:	Section 9.1
	(a) include:	
	(i) a combination of attended and unattended noise monitoring measures;	
	(ii) detailed measures to comply with condition 4C of this Schedule; and	Section 9 and 10
	(iii) a noise monitoring protocol for evaluating compliance with the noise criteria in Table 2 of this Schedule; and	Section 9.2
	(b) be submitted to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).	Section 9
Schedule 3 Condition 6A	The Applicant must implement the Noise Monitoring Program as approved by the Planning Secretary.	Section 9
Meteorological Monitoring		
Schedule 3 Condition 18	The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that: (a) complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007); and	Section 9
	(b) is capable of measuring meteorological conditions in accordance with the *NSW Industrial Noise Policy* (EPA, 2000), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	Section 9
Notification of Landowners		
Schedule 4 Condition1	If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant must notify the Planning Secretary and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) accordingly, and provide monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.	Section 9.3 and 9.4
Notification of Exceedances		
Schedule 4 Condtion 1A	As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in Schedule 3 of this consent, the Applicant must provide	Section 9.4

Condition	Description	Section(s) Addressed
	the details of the exceedance to any affected landowners and/or tenants. For any exceedance of any air quality criterion in Schedule 3 of this consent, the Applicant must also provide to any affected land owners and tenants a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017).	
Environmental Monitoring		
Schedule 5 Condition 2	Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.	Section 11.2
Schedule 5 Condition 2A	Noise, blast and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in Schedule 3, providing that these representative monitoring locations are set out in the respective management plan(s) and/or monitoring program(s).	Section 9
Reporting		
Schedule 5 Condtion 3	The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.	Section 9.3
Schedule 5 Condtion 3A	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 9.3
Community Consultative Committee		
Schedule 5 Condtion 7	The Applicant must operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Planning Secretary, in accordance	Section 12

Condition	Description	Section(s) Addressed
	with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019).	
Access to Information		
Schedule 5 Condtion 8	Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Applicant must:	Section 11.3
	(a) provide a copy of the relevant document/s to the relevant agencies and CCC; and	
	(b) put a copy of the relevant document/s on its website.	Section 11.3
Schedule 5 Condtion 9	During the development, the Applicant must:	Section 11.3
	(a) include a copy of this consent, as may be modified from time to time, on its website;	
	(b) provide a full summary of monitoring results required under this consent on its website; and	Section 11.3
	(c) update these results on a regular basis (at least every 6 months).	Section 11.3
Statement of Commitments - Noise		
9	The proponent will continue to implement the following measures, which are currently in place at Ardglen Quarry, to mitigate noise impacts: • Quarry hours are restricted to between 6am and 5:30pm; • Noise created by haul trucks, both empty and loaded, is reduced by imposing a speed limit of 50km/h when travelling on local roads between the quarry and the highway. Trucks on site are limited to a speed of 25km/h; • All on-site, fixed and mobile diesel-powered plant, excluding road vehicles, are correctly fitted and maintained to manufacturer specifications. Particular attention is given to engine exhaust systems and the care and maintenance of mufflers. Further noise control is nominated through the implementation of the following measures: • Reduction of equipment through the separation of site activities to overburden stripping and exctraction, whereby they do not occur simultaneously; • Rail loading will be limited to the day period (7am to 6pm) as much as practicable; • The surge bin will be lined with latex or polymer liners to reduce impulsive noise; • A sheet metal enclosure will be built around the rail loader discharge and extend to include the rail wagon being loaded. The enclosure will be constructed of sheet metal and will cover the length of a minimum of three wagons whereby the wagon being	Section 10

Condition	Description	Section(s) Addressed
	loaded will be in the centre of the enclosure. The enclosure will be open at the ends and will contain a roof which will be conntected to the rail loader discharge. • Gaps between the loader discharge and the roof will be sealed; • The two scrapers initially assigned for overburden stripping will be replaced by one excavator and two articulated dump trucks; • The existing screens will be located behind earth bunds; and mobile acoustic barriers or earth arriers will surround the drill rig and any mobile plant situation on the surface during initial stripping; and • Where land slopes away from stripping activities to receievers, barriers will be raised to a height of 4 metres, so there is no direct line of site to receivers.	
10	Except during night-time rail loading activities, the proponent will ensure that the noise generated by the project does not exceed the levels set out in Table 2, at any privately-owned residence ,unless a specific agreement is reached with the landholder, in which case the proponent may exceed the noise limits set out in Table 2 in accordance wit the negotiated noise agreement.	Section 7 Section 9

4. RESPONSIBILITIES

As detailed in **Table 2**, it shall be the responsibility of the Quarry Manager (QM) to ensure that the requirements of this plan are implemented.

Table 2 - Role and Responsibilities of Quarry Personnel

Role	Responsibility
Daracon Divisional Manager – Construction Materials	Provide sufficient resources for the implementation of this plan.
Daracon Quarries Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Coordinate the implementation of noise management measures and strategies in accordance with this plan. • Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs.
Environmental Officer / Systems Manager	• Coordinate the review of this plan in accordance with the requirements of the Approval. • Coordinate the noise monitoring program described in this plan. • Evaluate and report monitoring results as required by the Consent and Environment Protection Licence (EPL). • Coordinate noise related incident investigations and reporting as required by legislation. • Initiate investigations of complaints as received from the public or government agency. • Provide primary contact for complaints and supply follow-up information to any complainant. • Prepare a report to government agencies or neighbours following incidents/ non-compliances.
All employees and contractors	• Comply with all requirements in this plan. • Report all potential environmental incidents to the Environmental Officer/Quarry Manager immediately. • Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment. • Follow any instructions provided by the Quarry Manager.

5. HOURS OF OPERATION

The hours of Ardglen Quarry operation taken from the Approval are shown in

We commit to implementing and complying with the work hours listed in Table 3.

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We commit to implementing and complying with the work hours listed in Table 3.

Table 3: Hours of Operation

Activity	Day	Time
Topsoil/overburden removal and emplacement	Monday-Saturday	7:00am – 5:00pm
	Sunday	None
Blasting	Monday-Friday	10:00am– 3:00pm
	Saturday, Sunday and public holidays	None
In-pit activities (including drilling, extraction, and transfer of material out of the pit)	Monday-Saturday	7:00am – 5:30pm
	Sunday and public holidays	None
Out-of-pit activities (including processing and stockpiling)	Monday-Saturday	7:00am – 5:30pm
	Sunday and public holidays	None
Maintenance (if inaudible at nearby residences)	Monday-Sunday	Any time
Truck loading and distribution	Monday-Saturday	6:30am – 5:30pm
	Sunday and public holidays	None
Rail loading	Monday-Sunday	7:00am – 10:00pm

6. OUT OF HOURS WORK REQUIREMENTS AND COMMITMENTS

If loading more than 2 trains outside the rail loading and distribution hours (see Table 3) in any 12 month period is required, Daracon will seek an agreement in writing with the Planning Secretary.

If the Daracon intends to undertake out of hours rail loading, Daracon will use its best endeavours to notify all local residents at least 12 hours prior to the proposed rail loading, to the satisfaction of the Planning Secretary.

If blasting operations outside the hours listed in Table 3 is required for safety reasons, Daracon will notify the EPA and the local community about the proposed blast as soon as possible.

7. NOISE IMPACT ASSESSMENT CRITERIA

The Department of Planning, Industry & Environment (DPIE) issued noise impact assessment criteria for the Ardglen Quarry's operational noise at each of the surrounding residences. The approved noise impact assessment criteria for the surrounding residences are reproduced in Table 4. These criteria are as specified in Table 2 of the of the Approval.

Daracon will implement the use of this NMP to ensure that the combined construction and operational noise generated by the Ardglen Quarry does not exceed the noise impact assessment criteria in Table 4 at any residence on privately-owned land.

Table 4 - Noise Impact Assessment Criteria dB(A) for the Ardglen Quarry

ID	Property	Day $L_{Aeq, 15min}$	Evening $L_{Aeq, 15min}$	Night	
				$L_{Aeq, 15min}$	$L_{A1,1min}$
4	C Thompson	44	35	35	45
5	M Taylor	45	35	35	45
6	E Russell	45	35	35	45
9	Bates	37	35	35	45
10	Avery	38	35	35	45
12	G Smith	36	35	35	45
13	McGhie	35	35	35	45
14	P Purtell & S Harnes	36	35	35	45
15	P Dalton	43	35	35	45
16	Bojba	40	35	35	45
All other privately owned land		35	35	35	45

Additionally, the Approval also states that if the Daracon has a written negotiated noise agreement with any landowner of the land listed in Table 4, and a copy of this agreement has been forwarded to the DPIE and EPA, then Daracon may exceed the noise criteria in Table 4 in accordance with the negotiated noise agreement. Daracon may also exceed the LA1(1 min) and LAeq(15 min) noise impact assessment criteria during out of hours rail loading activities provided they are conducted in accordance with Schedule 3, Condition 41 of the Approval.

Schedule 3, Condition 41 of the Approval states that Daracon may only load a maximum of 2 trains outside the rail loading and distribution hours provided in Table 3 in any 12 month period, unless agreed to in writing by the Planning Secretary.

Furthermore, as stated in Schedule 3, Condition 42 of the Approval, if Daracon intends to undertake out of hours rail loading, it must use its best endeavours to notify all local residents at least 12 hours prior to the proposed rail loading, to the satisfaction of the Planning Secretary.

Section **Error! Reference source not found.** of this NMP details Daracon's out of hours work requirements and commitments for the Ardglen Quarry.

7.1 Likely Sources of Noise During Operations

During the operation of the Ardglen Quarry, Daracon proposes to use the following noise generating equipment:

- Excavators;
- Water carts
- Articulated dump trucks
- Dozers
- Front-end loaders
- Jaw crusher
- Cone crusher
- Screening equipment
- Canica crusher
- Pugmill
- Rock Drills
- Blasting equipment
- Road trucks for deliveries of gravels and other materials
- Train engines and wagons
- Others as required

Note that any subcontractor plant will be also assessed for suitability for the task on site.

8. CONSTRUCTION NOISE

Daracon commits to undertaking all construction work at the Ardglen Quarry within the following standard construction hours:

- 7.00am to 6.00 pm Monday to Friday
- 8.00am to 1.00pm Saturday
- No work to be undertaken on Sundays and Public Holidays.

Daracon will ensure that the combined construction and operational noise generated by the development does not exceed the noise impact assessment criteria limits outlined in Table 4, except where:

- Daracon has a written negotiated agreement with the owner(s) of the relevant residence/land.
- An alternative temporary construction noise limit has been approved by the PlanningSecretary for specific construction works or for a fixed period of time.

Daracon currently has a written negotiated contruction noise agreement with the following receiver:

- Land ID – 10 in Table 4.

If Daracon seeks a temporary construction noise limit for nominated construction activies, Daracon will submit a separate Construction Noise Protocol document to the Planning Secretary for approval, prior to undertaking the nominated construction works. The protocol will:

- Be prepared in consultation with the EPA and any landowners who may be affected by the noise generated by the nominated construction works.
- Address the relevant requirements of the Interim Construction Noise Guideline (DECC 2009).

Daracon will implement any Construction Noise Protocol documents as approved by the Planning Secretary.

9. NOISE MONITORING PROGRAM

As required in Schedule 3, Condition 6 of the Approval, the noise monitoring program for this NMP will include the following:

- A combination of attended and unattended noise monitoring measures;
- Detailed measures to comply with Schedule 3, Condition 4C of the Approval; and
- A noise monitoring protocol for evaluating compliance with the noise criteria in Schedule 3, Condition 2 - Table 2 of the Approval.

This noise monitoring program was to be submitted to the Planning Secretary for approval within three months of the determination of MOD 2. However, Daracon notified DPIE on 11 June 2021 of its intention to submit this NMP on 31 July 2021. At the time of submission of this plan Daracon is yet to receive a valid response from DPIE.

Daracon will implement this noise monitoring program for the Ardglen quarry as approved by the Planning Secretary.

9.1 Attended and Unattended Noise Monitoring Monitoring

Attended and unattended noise monitoring shall be undertaken monthly whilst quarry operations are being carried out, with all monitoring to be carried out by an appropriately qualified environmental consultant. Attended monthly (whilst quarry operations are being carried out) noise compliance monitoring will be used to accurately determine the noise contribution from the Ardglen Quarry's activities.

The meteorological station, located East of the Arglen Quarry will be used to measure meteorological conditions in accordance with the NSW Industrial Noise Policy (EPA, 2000).
Attended noise monitoring will be conducted as follows;

- All noise investigations will be carried out in accordance with the Industrial noise policy (EPA, 2000)and applicable Australian Standards.
- Noise levels will be measured in one-third octave bands using an instrument with IEC Type 1 characteristics as defined in AS 1259-1990 "Sound Level Meters". The instrument will have current calibration as per manufacturer's instructions and field calibration will be confirmed before and after measurements with a sound level calibrator.
- The instrument will be set to A-weighting, "fast" response and measurements of Leq (15 minute) will be taken. Each measurement will be stored at a sampling rate of no greater than 5 seconds for further analysis.
- During operations, attended surveys will be conducted during the approved hours of operation with measurements taken at identified sensitive receptor locations to ensure that noise levels during the full range of operating times are monitored. See 5 and
- Figure 1 for attended noise monitoring locations.
- Field notes will be taken during each measurement recording the time and duration of noise events, noise sources, instantaneous noise levels and the frequency range of identified site noise sources.
- Extraneous noise sources will be filtered from the measured signal using recognised and appropriate methodologies) and the Leq (15 minute) level attributable to the quarry activities will be identified and compared with the relevant criteria.
- Details regarding survey interval, weather conditions, extraneous noise sources, monitoring locations and times of measurement will be recorded for inclusion in the monthly (whilst quarry operations are being carried out) noise monitoring report.

Unattended noise surveys will be conducted as follows:

- Unattended noise logging will be conducted to coincide with the monthly (whilst quarry operations are being carried out) attended surveys; Unattended noise loggers will be deployed at two selected locations near the quarrying operations for a three day period where practical coinciding with the attended survey.
- IEC Type II noise loggers with current calibration as per manufacturer's instructions will be used.

- The logger(s) will be placed at locations to coincide with a measurement location for the attended surveys (where practical).The microphone will be fitted with a matching wind shield and will not be placed under trees or near an extraneous noise source (e.g., pool pumps or electrical transformers);
- Levels will be measured continuously over a seven day period at 15-minute statistical intervals. Noise percentiles recorded shall include Lmax, Leq, L1, L10, L90 and Lmin.
- Weather data for the unattended noise monitoring period will be interrogated to determine periods of rain or wind speeds over 5 m/s. Corresponding noise data will be highlighted as invalid.
- Logger data will be displayed graphically in the monthly (whilst quarry operations are being carried out) noise monitoring report .

Attended noise monitoring locations are shown in Table 5 and presented in Figure 1.

Table 5 - Attended Noise Monitoring Locations

ID	Property	Coordinates	
		Northing	Easting
4	C Thompson	6486527	290168
13	McGhie	6487505	289094
14	P Purtell & S Harnes	6486750	289675
16	Bojba	6486815	290058

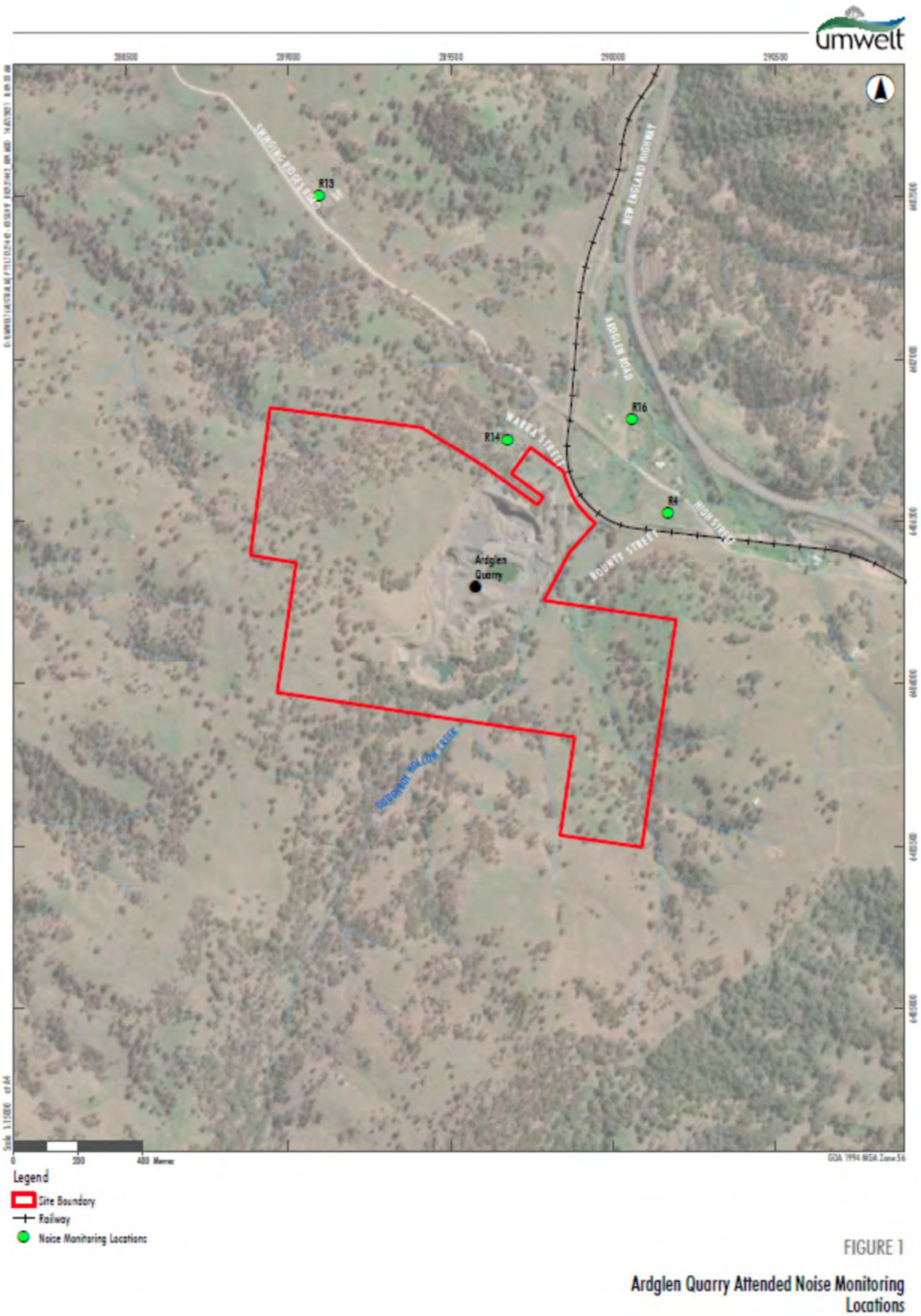

Figure 1 - Attended Noise Monitoring Locations

9.2 Noise Monitoring Protocol

In accordance with Schedule 3, Condtion 6(a)(iii) of the Approval, this noise monitoring protocol has been developed for the Ardglen Quarry and will be used for evaluating compliance with the noise impact assessment criteria in Table 2 of the Approval.

In accordance with the Industrial noise policy (EPA, 2000), compliance with the noise impact assessment criteria will be determined by attended noise monitoring surveys. Daracon will be deemed to have recorded an exceedance of the noise impact assessment criteria (refer to Table 4) if attended noise monitoring identifies that the noise generated from the operational activities of the Ardglen Quarry exceeds the noise impact assessment criteria.

The process to be utilised by Daracon to evaluate compliance with the noise impact assessment criteria is detailed below:

1. Daracon is to engage a suitably qualified noise consultant to conduct attended noise monitoring at the locations specified in**Table 5** on a monthly (whilst quarry operations are being carried out) basis.

2. Following the analysis of attended noise monitoring results, if the measured noise levels of the Ardglen Quarry are compliant with the noise impact assessment criteria for all of the attended noise monitoring locations, the noise consultant will notify Daracon that they are compliant with the noise impact assessment criteria for the quarter. Following the completion of attended noise monitoring, a report will be prepared by the noise consultant detailing the attended noise monitoring results and will be given to Daracon.

3. Proceed to step 4 if an exceedance of the noise impact assessment criteria is detected at any of the noise monitoring locations.

4. Following the analysis of the attended noise monitoring results, if the measured noise levels for the Ardglen Quarry exceed the noise impact assessment criteria at any of the noise monitoring locations, the noise consultant will immediately notify the relevant Ardglen Quarry staff of the exceedance and if possible provide detail as to the likely cause of the exceedance. The exceedance will be considered a non-compliance with the noise impact assessment criteria and will be reported by the relevant Ardglen Quarry staff to DPIE in accordance with the non-compliance notification procedure described in **Section 9.3** of this NMP.

5. Following notification of the exceedance, where practicable, modifications to the daily operations of the Arglen Quarry will be implemented by the relevant Ardglen Quarry staff to reduce the quarry's noise emissions and prevent further exceedances of the noise impact assessment criteria. If necessary, we commit to modifying and/or stopping operations on the site to ensure compliance.

9.3 Exceedance Protocol Non-Compliance Notification

In accordance with, Schedule 5 Condition 3A of the Approval , within seven days of becoming aware of a non-compliance with the noise criteria, Daracon will notify the DPIE of the non-compliance. The notification will be in writing to compliance@planning.nsw.gov.au. The notificiation will identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Furthermore, Daracon will notify the DPIE in writing (compliance@planning.nsw.gov.au) and any other relevant Agency immediately after it becomes aware of an incident as defined by the Approval. An incident notification shall (at a minimum) identify the development and set out the location and nature of the incident.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

9.4 Notification of Exceedances to Landowners

If attended noise monitoring results identify that impacts generated by the development are greater than the noise impact assessment criteria in Table 5, Darcon will:

- Notify the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) as soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of the noise impact assessment criteria.
- Provide monthly (whilst quarry operations are being carried out) monitoring results to each of the affected landowners until the attended noise monitoring results show that the development is complying with the noise impact assessment criteria in **Table 5.**
- Notify the Planning Secretary in accordance with Schedule 4, condition 1 of the Approval.

10. OPERATIONAL CONTROLS

We commit to implementing the recommended noise mitigation measures as outline in the MOD 2EA to the satisfaction of the Planning Secretary.This includes the following proactive and reactive actions or strategies to minimise the potential for noise impacts at residential receivers whilst extraction and transportation of material is taking place:

10.1 Proactive Noise Mitigation Measures

In accordance with Schedule 3, Condition 4C(b) of the Approval, the following proactive noise mitigation measures will be in place for the quarry to proactively manage potential noise impacts.

- Quarrying operations will be carried out between the hours of 6:30 am to 5.30 pm;
- Rail loading will be limited to the day period between 7am and 6pm, as far as practicable;
- Placement of site compounds, site access roads, parking areas, stationary equipment and material stockpile areas away from noise sensitive areas;
- Mobile equipment speed limits will be implemented;
- Truck movements to and from the site will be restricted by number of movements and time of day;
- Diesel powered equipment will be regularly inspected and maintained with any noise related defects rectified to ensure equipment remains at or below target sound power levels as described in the Environmental Assessment for the project.(
- Daracon operates a modern fleet of plant and vehicles, with the latest in engine technology available. Measures will be implemented to select the appropriate piece of the plant for the activity based on superior noise performance.
- Where practicable, noise generating activities occurring simultaneously will be avoided;
- Where practicable, mobile acoustic barriers and/or earth bunds will be utilised to reduce noise transmission;
- Engines to be switched off when not in use;
- When possible, before daily quarry operations commence an assessment of forecasted weather conditions will be undertaken with respect to potential for noise enhancing conditions. If noise enhancing meteorological conditions are identified, then the environmental personnel for the site will inform the QM (or relevant operational supervisor). The QM will then, where practicable, temporarily modify the quarry's daily operations to reduce noise impacts to receptors. Temporary modifications to the quarry's daily operations may include but are not limited to the following:

  - Relocating, modifying, or ceasing operations as necessary to minimise noise emissions.
  - Instructing dozers to operate in first gear.
  - Reduce the drop height of materials during operations.
  - Restricting crusher operations.
  - The shutdown of auxiliary equipment.

- Daracon will where practicable, continue to modify the quarry's daily operations to reduce the noise emissions of the quarry under all weather conditions.
- Noise management training and completion of regular tool-box talks to enforce the importance of noise impact mitigation will be undertaken by relevant quarry personnel.
- Not operating processing equipment while undertaking rail loading;
- Not operating processing equipment while undertaking topsoil/overburden removal or emplacement;

10.2 Reactive Noise Mitigation Measures

In accordance with Schedule 3, Condition 4C(b) of the Approval, the following reactive noise mitigation measures will be in place for the quarry to manage potential noise impacts.

- When possible, during daily quarry operations an assessment of current weather conditions will be undertaken with respect to potential for noise enhancing conditions. If noise enhancing meteorological conditions are identified, then the environmental personnel for the site will inform the QM (or relevant operational supervisor). The QM will then, where practicable, temporarily

modify the quarry's daily operations to reduce noise impacts to receptors. Temporary modifications to the quarry's daily operations may include but are not limited to the following:

- Relocating, modifying, or ceasing operations as necessary to minimise noise emissions.
- Instructing dozers to operate in first gear.
- Reduce the drop height of materials during operations.
- Restricting crusher operations.
- The shutdown of auxiliary equipment.

- If the quarry receives a noise complaint from a nearby receiver, the QM (or relevant operational supervisor) will be notified of the complaint. The QM or relevant operational supervisor will respond to the complainant within 24 hours if the complainant is contactable to try and identify what caused the noise complaint. If the Ardglen Quarry is the cause of the noise complaint, the nature of the noise complaint will then be investigated and where practicable, the quarry's daily operations will be modified to try and reduce the noise impact that led to the noise complaint.

Any changes to the quarry's daily operations that are successful in resolving a noise complaint will be recorded for future use.

- Modifications to the Ardglen Quarry's daily operations will also be utilised when an exceedance of the noise impact assessment criteria for the quarry is detected during monthly (whilst quarry operations are being carried out) attended noise monitoring.

10.3 Additional Noise Mitigation Measures

As per procedures in this NMP, and in keeping with the intent of the Statement of Commitments in the Approval, the monitoring of emitted noise levels will be undertaken during quarrying operations to verify compliance with noise criteria and to assess the need, if any, for additional noise attenuation measures.

Should the noise monitoring results indicate it is warranted investigations will be carried out into the reasonableness and feasibility of the following options in reducing noise emissions from the Ardglen Quarry site:

- The effects of lining the rail loader surge bin to reduce impulsive noise from material impacting on the side of the bin.
- Partially enclosing the rail loader discharger to minimise noise emissions from loading activities.
- Treating the crushers with silencing equipment and/or cladding.
- Additional earthen bunds around the crushers and screens.
- Others noise mitigation methods as deemed reasonable and feasible.

10.4 Continuous Improvement

As part of the operation of Ardglen Quarry and as required by Condition 5 of the Approval, Daracon will:

- Implement all reasonable and feasible noise mitigation measures;
- Investigate ways to reduce the noise generated by the project, including off-site road and rail noise and maximum noise levels which may result in sleep disturbance.
- Report on these investigations and the implementation and effectiveness of these measures in the Annual Review, to the satisfaction of the Planning Secretary.

11. REVIEW AND IMPROVEMENT

11.1 Inspection and Review

The Quarry Supervisor shall monitor performance of the noise mitigation measures to confirm the effectiveness of methods, equipment and controls. Results shall be recorded and opportunities for improvement recommended to the QM.

The NMP and associated documentation shall be formally reviewed by the QM at minimum twelve (12) monthly intervals. Any reviews and alterations to the NMP shall be recorded according to the document control procedure.

We also commit to implementing the revision of strategies, plans and programs as set out in Condition 15, Schedule 2 of the Approval when required. Additionally, any revisions to the NMP will require the approval of the Planning Secretary before being implemented.

11.2 Audits

Conformance audits will be carried out on the relevant processes and subcontractors in accordance with the master audit schedule. Auditors shall be suitably qualified and independent of the processes being assessed.

The scope of audits undertaken will include incident notification, reporting and response, non-compliance notification, compliance report and independent audits in accordance with the relevant conditions of the Approval (Schedule 5 conditions 3, 3A, 4 and 5).

11.3 Records and Reporting

A summary of the noise monitoring results required by the Approval will be:

- Stored electronically in a central location for routine assessment;
- Provided on the Daracon Group website;
- Updated on a regular basis at least every 6 months;

Additionally, all noise management matters will be reviewed and included in the Annual Environmental Management Report (AEMR) due at the end of March the following year, such as:

- A description of the development including any additional mitigation measures employed;
- A comprehensive review of all monitoring results for the reporting period and an analysis of trends. These will be measured against the specific requirements set out in (i) – (iv) of Condition 4 Schedule 5 (b) of the Approval;
- Analysis and commentary on all incident notifications, non-compliance notifications, compliance reports and independent audits. This will include details of actions taken to rectify and avoid reoccurrence;
- Commentary on the effectiveness of controls implemented. This will evaluate and report on the effectiveness of the noise management systems and compliance with the performance measures, criteria and operating conditions of the Approval;
- Review and commentary on any discrepancies identified between predicted and actual impacts;
- Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development if required.

Noise monitoring results will be compared to the assessment criteria and guidelines detailed in Section 7 on at least a monthly (whilst quarry operations are being carried out) basis. Monitoring reports will also identify and comment on any exceedances and/or trends in monitoring results. Monitoring results will be reported internally to the Senior Manager and used as a basis for external reporting.

Any exceedances of noise assessment criteria or non-compliance with any statutory requirement will be treated as an environmental incident and handled according to the non-compliance notification procedure as detailed in Section 9.3 of this NMP.

Within 3 months of the approval of this NMP or any subsequent revision of this NMP, Daracon will:

- Provide a copy of the NMP to the relevant agencies and Community Consultation Committee (CCC).
- Put a copy of the NMP on the Daracon website

A copy of the Approval, as may be modified from time to time, will also be provided on the Daracon website.

12. Community Consultation and Complaints

A CCC has been established to address any concerns raised by local members of the community. Regular meetings of the CCC will continue to occur in accordance with Schedule 5, Condition 7 of the Approval.

A complaint process has been developed as is summarised as follows:

- A publicly advertised telephone complaints line will be utilized to receive complaints during operating hours and record complaints at other times.
- Ensure that all complaints are recorded on the relevant form and circulated to the necessary quarry personnel for action.
- Ensure that an initial response is provided within 24 hours of receipt of a complaint except in the event of complaints recorded when the quarry is not operational.
- Provide a report of complaints received every 12 months as part of the Annual Review.

The complaints record will include the following details for noise complaints:

- The date and time of the complaint.
- Any personal details the complainant wishes to provide or if no such details are provided a note to that effect.
- The nature of the noise that led to the complaint, including the time of the noise and its duration.
- The action taken by the quarry in relation to the complaint, including any follow-up contact with the complainant.
- If no action was taken by the quarry, the reason why no action was taken.

13. APPENDIX A – EPA CORRESPONDENCE

DOC21/657976-2
5 August 2021

Industry Assessments
Planning and Assessment Division
Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124
Email: @planning.nsw.gov.au

EPA Submission on Request for Advice on Noise Management Plan

Thank you for your request from Public Authority Consultation (PAE-24874042) for the Environment Protection Authority (EPA)'s advice on the Noise Management Plan for Ardglen Quarry (MP06_0264-PA-13).

The EPA does not provide advice on or endorsement of any management plans developed for planning assessments.

Accordingly, the EPA will not be providing comment further to this request.

Please contact myself on (02) 6773 7000 or by email to armidale@epa.nsw.gov.au if you wish to discuss this matter further.

Yours sincerely,

LINDSAY FULLOON
Manager Regulatory Operations, Regional West

APPENDIX 6 Air Quality Management Plan

DARACON Group

Air Quality Management Plan

Project Name	Ardglen Quarry
Job No.	BAR
Client	Various
Contract No.	N/A

Document No. 1
Holder: DARACON / Client

Revision	Date	Prepared by	Reviewed by Quarry Manager	Authorised by Systems Manager	
				Name	Sign
08	12/11/21	Luke Robinson	Paul Walker	Luke Robinson	

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1. INTRODUCTION

Ardglen Quarry (the Quarry) is located on Lot 218 DP 751028, Lot 1 DP 1001734, Lot 187 DP 751028, Lot 39 DP 751028 and Lot 49 DP 751028, adjacent to the small rural community of Ardglen. Ardglen is approximately 5 kilometres (km) northwest of Murrurundi and 60 km southwest of Tamworth. The Quarry is owned and operated by Buttai Gravel Pty Ltd (trading as Daracon Quarries).

NSW Railways owned and operated the Quarry for over 100 years prior to the purchase by Daracon. In 2008 Daracon was granted approval under Part 3A of the Environmental Planning & Assessment Act 1979, to extend quarrying activities into the adjacent lot west of the existing operation, Lot 218 DP 751028. In December 2010 Daracon was granted approval for a modification to the Project Approval (Mod 1) and most recently in March 2021 approval was granted for a second modification to the Project Approval (Mod 2 - the Approval)

The Approval permits:

- the extraction and processing of up to 500,000 (tpa)of material
- transport of a combined total 500,000 tonnes/year of quarrying products from the site by road and/or rail by either:
- transport of 250,000 (tpa)of quarrying products from the site by rail
- transport of 500,000 (tpa) of quarrying products from the site by road
- Installation of noise management measures including barriers/bunds
- Modify the sediment basin, in pit sump and water treatment measures
- import of up to 80,000 tonnes/year for blending with quarried materials
-

The following Air Quality Management Plan (AQMP) details the measures required to mitigate the environmental effect on air quality of the above activities. It also details the air quality monitoring programs to assess and report the levels of impact, in compliance with Schedule 3 of the Approval.

This document has been prepared to satisfy the requirements of Section 3, Condition 17 of the Approval.

2. OBJECTIVES

The objectives of this AQMP are:

- To comply with all statutory requirements related to air quality management;
- To minimise air quality impacts on surrounding residents and properties;
- To maintain reasonable levels of amenity for surrounding residents;
- To keep the local community and regulators informed and to respond quickly and effectively to issues and complaints; and
- To ensure that air quality is measured according to best practice and results are presented in a timely and transparent manner to stakeholders.
- To employ best practice environmental planning methodologies;
- To construct and/or incorporate within the works appropriate environmental control measures;
- To provide guidance for relevant training to all personnel involved in environmental aspects (incl. site induction, specific environmental aspects, toolbox talks);

This AQMP (Including the 'Monitoring Program' and 'Compliance Protocol') has been prepared to satisfy the requirements of the Approval and the Environmental Protection Licence (EPL #1115) associated with the Ardglen Quarry operations.

In addition to meeting the specific performance measures and criteria in this Approval, we also commit to implementing all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this Approval.

Additionally, we commit to applying existing management strategies plans or programs until the approval of a similar plan following the determination of the Approval.

3. LEGAL AND OTHER REQUIREMENTS

Daracon Group has an obligation under the provisions of the Protection of the Environment Operations (POEO) Act 1997, to protect the environment and prevent air pollution. Accordingly, it is a requirement of consent, as per the Approval and EPL #1115 that a program of environmental controls pertaining to air quality be planned, documented implemented and monitored for Ardglen Quarry.

3.1 Project approval

Table 1 below outlines the relevant Project Approval conditions and where they have been addressed within the AQMP.

Table 1 – Regulatory Requirements

<table>
<tr><th>Condition</th><th>Description</th><th>Section(s) Addressed</th></tr>
<tr><td>Schedule 3
Condition 1</td><td>The Applicant must comply with the hours of operation in Table 1 from the Approval.
Table 1: Hours of Operation
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td rowspan="2">Topsoil/overburden removal/emplacement</td><td>Monday-Saturday</td><td>7.00am to 5.00pm</td></tr>
<tr><td>Sunday</td><td>None</td></tr>
<tr><td rowspan="2">Blasting</td><td>Monday-Friday</td><td>10:00am to 3.00pm</td></tr>
<tr><td>Saturdays, Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">In-pit activities (including drilling, extraction, and transfer of material out of the pit)</td><td>Monday-Saturday</td><td>7.00am to 5:30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">Out-of-pit activities (including processing, and stockpiling)</td><td>Monday-Saturday</td><td>7.00am to 5:30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Maintenance (if inaudible at nearby residences)</td><td>Monday-Sunday</td><td>Any time</td></tr>
<tr><td rowspan="2">Truck loading and distribution</td><td>Monday-Saturday</td><td>6.30am to 5.30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Rail loading</td><td>Monday-Sunday</td><td>7:00am to 10:00pm</td></tr>
</table>
Note:
• The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41).
• The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast.</td><td>Section 8</td></tr>
<tr><td colspan="3">Air Quality</td></tr>
<tr><td colspan="3">Impact Assessment Criteria</td></tr>
</table>

<table>
<tr><th>Condition</th><th>Description</th><th>Section(s) Addressed</th></tr>
<tr><td rowspan="5">Schedule 3 Condition15</td><td>The Applicant must ensure that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 8, 9 and 10 at any residence on privately-owned land.</td><td rowspan="5">Section 5
Section 6
Section 8</td></tr>
<tr><td>Table 8 from the consent: Long term impact assessment criteria for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr>
<tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>[a, c] 90 µg/m³</td></tr>
<tr><td>Particulate matter < 10 µm (PM_{10})</td><td>Annual</td><td>[a, c] 25 µg/m³</td></tr>
<tr><td>Particulate matter < 2.5 µm ($PM_{2.5}$)</td><td>Annual</td><td>[a, c] 8 µg/m³</td></tr>
</table></td></tr>
<tr><td>Table 9 from the consent: Short term impact assessment criterion for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr>
<tr><td>Particulate matter < 10 µm (PM_{10})</td><td>24 hour</td><td>[b] 50 µg/m³</td></tr>
<tr><td>Particulate matter < 2.5 µm ($PM_{2.5}$)</td><td>24 hour</td><td>[b] 25 µg/m³</td></tr>
</table></td></tr>
<tr><td>Table 10 from the consent: Long term impact assessment criteria for deposited dust
<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr>
<tr><td>[d]Deposited dust</td><td>Annual</td><td>[b] 2 g/m²/month</td><td>[a] 4 g/m²/month</td></tr>
</table></td></tr>
<tr><td>Notes:
[a] Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).
[b] Incremental impact (i.e. incremental increase in concentrations due to the development on its own).
[c] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.
[d] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.</td></tr>
<tr><td>Schedule 3 Condition 15A</td><td>The air quality criteria in Tables 8, 9 and 10 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or infrastructure to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</td><td>Section 5</td></tr>
</table>

Condition	Description	Section(s) Addressed
Operating Conditions		
Schedule 3 Condition 16	The Applicant must: (a) take all reasonable steps to: (i) minimise the particulate matter (including PM_{10} and $PM_{2.5}$) emissions of the development, paying particular attention to minimising wheel-generated haul road emissions;	Section 8
	(ii) improve energy efficiency and reduce greenhouse gas emissions of the development;	Section 8
	(iii) minimise any visible off-site air pollution generated by the development; and	Section 8
	(iv) minimise the extent of potential dust generating surfaces exposed on the site at any given point in time;	Section 8
	(b) operate an air quality management system to guide the day to day planning of quarrying operations and implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;	Section 8
	(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note C to Tables 8 to 10 above);	Section 8
	(d) carry out regular air quality monitoring to determine whether the development is complying with the relevant conditions in this consent; and	Section 9
	(e) regularly assess meteorological and air quality monitoring data and relocate, modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	Section 8
Monitoring		
Schedule 3 Condition 17	The Applicant must prepare an Air Quality Monitoring Program for the development in consultation with EPA and to the satisfaction of the Planning Secretary. This program must: (a) use a combination of high volume air samplers and dust deposition gauges to monitor the dust emissions from the development;	Section 9
	(b) include a protocol for demonstrating compliance with the air quality impact assessment criteria in this approval; and	Section 9
	(c) be submitted to the Planning Secretary for approval prior to within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).	Section 10.1

Condition	Description	Section(s) Addressed
Schedule 3 Condition 17A	The Applicant must implement the Air Quality Monitoring Program as approved by the Planning Secretary.	Section 9
Meteorological Monitoring		
Schedule 3 Condition 18	The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that: (a) complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007); and	Section 9
	(b) is capable of measuring meteorological conditions in accordance with the *NSW Industrial Noise Policy* (EPA, 2000), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	Section 9
Statement of Commitments – Air Quality		
12	In addition to the dust mitigation measures currently employed, the proponent will implement the following measures to ensure particulate matter emissions are minimised: • Revegetation of exposed surfaces where possible; • Sealing the haul road; • Limiting the speed limit on unpaved surfaces to 15km/hr; • High level watering of unpaved surfaces (greater than 2L/m^2/hr); • Covering all loads leaving the site; • Building a wheel wash at the end of the unpaved section of the haul road(after the weighbridge); and • Wet suppression or chemical coating of static stockpiles.	Section 8
13	The proponent will prepare and implement an air quality monitoring program for the project. The program will include: • A series of dust deposition gauges operated in accordance with the Australian/New Zealand Standard AS/NZS 3580.10.1:2003: and • A series of high volume or low volume air samplers to monitor levels of PM10, operated in accordance with Australian/New Zealand AS/NZS 3580.9.6:2003 and AS/NZS 3580.9.6:2003.	Section 9

4. RESPONSIBILITIES

As detailed in **Table 2**, it shall be the responsibility of the Quarry Manager (QM) to ensure that the requirements of this plan are implemented.

Table 2 - Responsibilities

Role	Responsibility
Daracon Divisional Manager – Construction Materials	Provide sufficient resources for the implementation of this plan.
Daracon Quarries Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Coordinate the implementation of air quality management measures and strategies in accordance with this plan. • Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs.
Environmental Officer / Systems Manager	• Coordinate the review of this plan in accordance with the requirements of the Approval. • Coordinate the air quality monitoring program described in this plan. • Evaluate and report monitoring results as required by the Consent and Environment Protection Licence (EPL). • Coordinate air quality related incident investigations and reporting as required by legislation. • Initiate investigations of complaints as received from the public or government agency. • Provide primary contact for complaints and supply follow-up information to any complainant. • Prepare a report to government agencies or neighbours following incidents/ non-compliances.
All employees and contractors	• Comply with all requirements in this plan. • Report all potential environmental incidents to the Environmental Officer/Quarry Manager immediately. • Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment. • Follow any instructions provided by the Quarry Manager.

5. AIR QUALITY CRITERIA

It is a requirement of the Project Approval (Schedule 3, Condition 15) that dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in **Tables 3, 4 and 5** at any residence on privately-owned land..

Table 3 – Long Term Air Quality Criteria

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	[a, c] 90 µg/m^3

Pollutant	Averaging Period	Criterion
Particulate matter <10 µm (PM_{10})	Annual	[a, c] 25 µg/m^3
Particulate matter < 2.5 µm ($PM_{2.5}$)	Annual	[a, c] 8 µg/m^3

Table4 – Short Term Air Quality Criteria

Pollutant	Averaging Period	Criterion
Particulate matter <10 µm (PM_{10})	24 hour	[b] 50 µg/m^3
Particulate matter <2.5 µm ($PM_{2.5}$)	24 hour	[b] 25 µg/m^3

Table 5 – Depositional Dust Criteria

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	[b] 2 g/m^2.month	[a] 4 g/m^2.month

Notes to Tables 3,4 and 5:
[a] Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).
[b] Incremental impact (i.e. incremental increase in concentrations due to the development on its own).
[c] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.
[d] Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

The air quality criteria in Tables 3, 4 and 5 do not apply where an agreement is in place with the owners of the relevant residence or infrastructure to exceed the air quality criteria, and the Department of Planning, Industry & Environment (DPIE) has been advised of the terms in writing (Schedule 3, Condition 15A).

6. SENSITIVE RECEPTORS

Daracon has identified the sensitive receptors for air quality as shown in **Table 6** and presented in Appendix B.

Table 6 – Sensitive Receptors

Receptor ID	Description
1	Residence –south of quarry.
2	Residence – eastof quarry.
4	Residence – north east of quarry.
5	Residence – north-east of quarry.
6	Residence – north-east of quarry.
7	Residence – north-east of quarry.
8	Residence – north-east of quarry.
9	Residence – north-east of quarry.
10	Residence – north of quarry.
11	Residence – north of quarry.

Receptor ID	Description
12	Residence – north of quarry.
13	Residence – north west of quarry.
14	Residence – north of quarry.
15	Residence – north-east of quarry.
16	Residence – north-east of quarry.
17	Residence –east of quarry.

Daracon will undertake regular community consultation (via the Community Consultation Committee) prior to and during the operation of the Quarry in accordance with Schedule 5 Condition 8 of the Approval.

7. ACTIVITIES WHICH MAY IMPACT AIR QUALITY

During operation, there is the potential for dust to be generated from multiple sources;

- Stripping of overburden;
- Drilling and blasting of rock;
- Loading product to haul and road trucks;
- Loading product to rail carriages;
- Dumping of product at the crushing facility;
- Crushing and screening;
- Dumping of material to stockpiles by front end loaders and conveyors;
- Wheel generated dust from road trucks, haul trucks and mobile equipment;
- Wind generated dust from exposed areas and stockpiles;
- Loading sales trucks;

8. MITIGATION MEASURES

In accordance with Schedule 3, Condition 16 of the Approval, Daracon will,

(a) take all reasonable steps to:

(i) minimise the particulate matter (including PM_{10} and $PM_{2.5}$) emissions of the development, paying particular attention to minimising wheel-generated haul road emissions;

(ii) improve energy efficiency and reduce greenhouse gas emissions of the development;

(iii) minimise any visible off-site air pollution generated by the development; and

(iv) minimise the extent of potential dust generating surfaces exposed on the site at any given point in time;

(b) operate an air quality management system to guide the day to day planning of quarrying operations and implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;

(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note C to Tables 2 to 4 above);

(d) carry out regular air quality monitoring to determine whether the development is complying with the relevant conditions in this consent; and

(e) regularly assess meteorological and air quality monitoring data and relocate, modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.

Specifically, the air quality management measures listed in **Table 7** have been adopted to minimise the impacts of particulate (dust) emissions from Ardglen Quarry. The aim of these procedures is to minimise dust from the sources listed previously in Section 7. During periods of excessive background dust from off-site sources, or in the case where mitigation measures are unable to reduce air pollution to an acceptable level, the Quarry Manager will ensure that pollution-generating activities are stopped until air pollution levels are acceptable.

We commit to implementing and complying with the work hours listed in Table 1 of the Approval.

We also commit to ensuring that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria shown in the Approval.

Table 7 – Mitigation Measures

Potential Pollution Source	Control Measures
Wind generated dust from exposed areas and stockpiles.	Wet suppression or chemical coating will be used on static stockpiles. Minimising the size and number of dust generating exposed areas and stockpiles at any time.
Wheel generated dust from road trucks, haul trucks and mobile equipment	The haul road is sealed to / from the wheel wash to minimise dust. Covering all loads leaving the site. The speed limit on unpaved surfaces is limited to 20km/hr. Maintaining vehicle speeds at a level where visible dust is restricted to below half the wheel height. High level watering will be done on unpaved surfaces. This will be achieved through the use of a water cart. A wheel wash will be built at the end of the unpaved section of the haul road for vehicles leaving the unpaved road. Dust generating activity from road trucks, haul trucks and mobile equipment will be limited to the approved hours of operation.
Loading product to haul and road trucks	All loads leaving the site will be covered. Stockpiles will be kept damp via watercart or fixed sprays. Dust generating activity from road trucks, haul trucks and mobile equipment will be limited to the approved hours of operation.
Fixed materials handling activities: Crushing and screening. Dumping of product at the crushing facility. Loading product to rail carriages.	Minimising dust-generating activities during times of high wind speeds. Reduction of the intensity/rate of activities in response to excessive dust generation. In response to frequent, intense air pollution generation from plant or machinery, engineering modifications will be investigated for the offending device. Dust generating activity from crushing, screening, stockpiling and rail loading will be limited to the approved hours of operation.

Potential Pollution Source	Control Measures
Other quarrying activities - Dumping of material to stockpiles by front end loaders and conveyors. Drilling and blasting of rock. Stripping of overburden.	Daracon shall continuously monitor meteorological data and forecasts to allow for proactive management of weather conditions. Management responses will include minimising or ceasing dust-generating activities during times of high wind speeds. Relocation of offending plant and equipment to less sensitive on-site areas. Reduction of the intensity/rate of activities in response to excessive dust generation. In response to frequent, intense air pollution generation from plant or machinery, engineering modifications will be investigated for the offending device. Daracon shall continuously monitor the site visually during operational hours to ensure any visible air pollution generated by the project is assessed and quarrying operations are relocated, modified, and/or stopped as required to minimise air quality impacts. Dust generating activity from stockpiling and material handling, and blast and overburden stripping will be limited to the approved hours of operation.
Vehicles and power generation producing greenhouse gases	Daracon shall continue to monitor energy use from the project and seek and implement appropriate efficiencies where practical opportunities allow. Such efficiencies maybe identified through reduced fuel and electricity usage wherever possible.

Dust mitigation methods will regularly be reviewed for adequacy, with alterations made as necessary to minimise the impacts of particulate (dust) emissions from Ardglen Quarry.

9. AIR MONITORING

The air quality monitoring actions listed in **Table 8** will be installed to demonstrate compliance with the air quality assessment criteria listed in the Project Approval and the EPL. Monitoring results will be assessed against performance criteria as soon as practicable after receipt of the results.

In combination with a review of any feedback received from the community or regulatory authorities during the monitoring period, all air quality results will be carefully reviewed against the Approval criteria and reported via the Daracon website to demonstrate compliance with the air quality impact assessment criteria.

We also commit to implementing the Air Quality Monitoring Program (AQMP), as approved by the Planning Secretary within 3 months of approval of the AQMP.

Additionally, the Quarry Manager or delegate will keep a record of changing wind and dust conditions on the *Environmental Inspection Report IM-REP-0503-001* and the actions undertaken to control the conditions. These inspections shall be recorded at least weekly and during working hours.

Table 8 – Air Quality Monitoring Program

Parameter	Frequency	Locations	Limit/Guideline
Deposited dust	Monthly.	DG-1 located at Receptor 17 (EPL point 2). DG-2 located at Receptor 7 (EPL point 3). DG-3 located at Receptor 11 (EPL point 4).	**Deposition Rate** Maximum increase in deposited dust level: 2 g/m^2.month. Maximum total deposited dust level: 4 g/m^2.month.
Dust deposition is measured via a passive funnel and bottle arrangement as shown here			
Total suspended particulate (TSP) matter	24 hours every 6 days.	TSP-1 located at Receptor 17.	**Concentration** 90 µg/m^3 as an annual average.
TSP is measured via a high volume air sampler arrangement as shown here			

Parameter	Frequency	Locations	Limit/Guideline
Particulate matter < 10 µm (PM_{10})	24 hours every 6 days.	PM10-1 located at Receptor 17. PM10-2 located at Receptor 11.	**Concentration** 50 µg/m^3 as a 24 hour average. 25 µg/m^3 as an annual average.
PM10 is measured via a high volume air sampler arrangement as shown here			
Particulate matter < 2.5 µm ($PM_{2.5}$) Note: Monitoring to commence within 3 months of approval of this plan.	24 hours every 6 days.	PM2.5-1 located at Receptor 11.	**Concentration** 25 µg/m^3 as a 24 hour average. 8 µg/m^3 as an annual average.
PM2.5 is proposed to be measured using a PQ200 Sampler as described here		**PQ200 Sampler - PM2.5 w/ VSCC** The PQ200 FRM Sampler uses BGI pioneering technology to meet and exceed the requirements for ambient particulate sampling dictated by the U.S Environmental Protection Agency (EPA). This includes the design of reliable PM10, PM2.5 and PM1 Inlets, volumetric sample flow rate control, data logging and software for report and data processing. The PQ200 configured for PM2.5 sampling includes a BGI Very Sharp Cut Cyclone (VSCC "TM") and PM10 louvered inlet head as well as the following stand-out features; -EPA PM2.5 Reference Method sampler (Designation No. RFPS-0498-116) -EPA PM Coarse approved sampler (Designation No. RFPS-1208-173) -Only designated reference sampler capable of a 24-hour run using internal battery. Internal battery provides power during AC power outages meaning you never have sample interruptions. -Ordered by EPA as the PEP Audit Reference Method - Automatic, multi-point flow calibration using the deltaCal calibrator	

Parameter	Frequency	Locations	Limit/Guideline
Meteorological station	Continuous.	Immediately adjacent to Quarry site	**Project Approval Schedule 3, Condition 18** The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and (b) is capable of measuring meteorological conditions in accordance with the NSW Industrial Noise Policy (EPA, 2000), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA. We will ensure that the meteorological station complies with the requirement in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales and in accordance with the NW Industrial Noise Policy.

Refer to **Appendix B** of this plan for the dust monitoring locations.

9.1 Non-compliance and Incident Protocol

Pursuant to Schedule 5, Condition 3A of the Approval, within seven days of becoming aware of an exceedance of the limits/performance criteria (a non-compliance), Daracon shall notify DPIEin writing (compliance@planning.nsw.gov.au) and any other relevant Agencies. Reporting the non-compliance shall be the responsibility of the Quarry Manager unless delegated at the assigned at the time of detection.

Furthermore, Daracon will notify the DPIE in writing (compliance@planning.nsw.gov.au) and any other relevant Agency immediately after it becomes aware of an incident as defined by the Approval. An incident notification shall include (at a minimum) the identity of the development and set out the location and nature of the incident.

A non-compliance notification shall (at a minimum):

- Identify the development (including development application number and name);
- Set out the condition of this consent that the development is non-compliant with;
- Indicate why it does not comply and the reasons for the non-compliance (if known); and
- What actions have been, and will be undertaken to address the non-compliance.

In addition to the above notifications issued to the DPIE and other relevant agencies, as per Schedule 4, Conditions 1 and 1A of the Approval, in the event of a non-compliance where impacts to air quality exceed assessment criteria Daracon shall notify affected landowners and/or existing or future tenants (including tenants of quarry owned properties) and provide quarterly monitoring results until the results show that the development is complying the relevant criteria. The period between detection and notification shall be no longer than seven days. Affected tenants and landowners shall also be provided with a copy of the NSW Health (2017) fact sheet “Mine dust and You”.

Additionally, and following an exceedance of the dust monitoring criteria, all relevant mitigation methods will be reviewed for adequacy, with alterations made as necessary to reduce or eliminate the impacts of particulate (dust) emissions from Ardglen Quarry.

10. REVIEW AND IMPROVEMENT

10.1 Inspection and Review

The Quarry Supervisor or delegate shall monitor performance of the air quality control facilities to confirm the effectiveness of methods, equipment and controls. Results shall be recorded and opportunities for improvement recommended to the Quarry Manager.

As per the Project approval, the updated AQMP including the Air Quality Monitoring Program (Section 9) will be submitted to the Planning Secretary for approval within 3 months of project determination. Daracon Quarries notified DPIE on 11 June 2021 of intentions to submit the plans on or before 31 July 2021 and have subsequently reviewed and updated the document in response to DPIE comments.

The AQMP and associated documentation shall be formally reviewed by the Quarry Manager at minimum twelve (12) monthly intervals. Any alterations to the AQMP shall be recorded according to the document control procedure.

Additionally, any revisions to the AQMP will require the approval of the Secretary (DPIE) before being implemented.

10.2 Internal Audit

Conformance audits will be carried out on the relevant processes and subcontractors in accordance with the master audit schedule. Auditors shall be suitably qualified and independent of the processes being assessed.

11. RECORDS AND REPORTING

The results of the dust deposition, ambient particulate concentration (TSP, PM_{10} and $PM_{2.5}$), meteorological and greenhouse gas monitoring detailed in the Air Quality Monitoring Program (see Section 8) will be stored electronically in a central location for routine assessment.

Monitoring results will be compared to the assessment criteria and guidelines detailed in Section 4 on at least a monthly basis. Monthly monitoring reports will also identify and comment on any exceedances and/or trends in monitoring results. Monthly monitoring results will be reported internally to the Senior Manager and used as a basis for external reporting.

Any exceedances of assessment criteria or non-compliance with any statutory requirement will be treated as an environmental incident and handled according to the incident management procedure as detailed within the Environmental Management Strategy.

Air Quality monitoring results will be routinely reported as detailed in **Table 9**.

Table 9 – Air Quality Monitoring Reporting

Report	Frequency	Recipients / Publishing	Statutory Requirement
Annual Environmental Management Report	By the end of March Annually	NSW Department of Planning, Infrastructure and Environment. Community Consultative Committee. Published on the Daracon Ardglen Quarry website.	Project Approval, Schedule 5, Condition 4.
Annual Return	Annually	EPA	EPL Condition R1.
Monthly Monitoring Reports	Monthly	Ardglen Quarry Website	POEO Act/EPL

Report	Frequency	Recipients / Publishing	Statutory Requirement
Monitoring Results Summary	Six monthly	Published on the Ardglen Quarry website.	Project Approval, Schedule 5, Condition 9.
	At CCC meetings	Community Consultative Committee.	Project Approval, Schedule 5, Condition 7.
	Quarterly	Following exceedance of any assessment criteria, the following recipients will receive quarterly monitoring results until results show that the Quarry is complying with all criteria: NSW Department of Planning, Infrastructure and Environment. Affected landowners. Affected existing or future tenants.	Project Approval, Schedule 4, Condition 1.

Additionally, all air quality management matters will be reviewed and included in the Annual Environmental Management Report (AEMR) due at the end of March the following year, such as:

- A description of the development including any additional mitigation measures employed;
- A comprehensive review of all monitoring results for the reporting period including an analysis of trends. These will be measured against the specific requirements set out in (i) – (iv) of Condition 4 Schedule 5 (b) of the Approval;
- Analysis and commentary on all incident notifications, non-compliance notifications, compliance reports and independent audits. This will include details of actions taken to rectify and avoid reoccurrence;
- Commentary on the effectiveness of controls implemented. This will evaluate and report on the effectiveness of the air quality management systems and compliance with the performance measures, criteria and operating conditions of the Approval;
- Review and commentary on any discrepancies identified between predicted and actual impacts;
- Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development if required.

12. APPENDIX A – EPA CORRESPONDENCE

DOC21/657814-2
5 August 2021

Industry Assessments
Planning and Assessment Division
Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124
Email: @planning.nsw.gov.au

EPA Submission on Request for Advice on Air Quality Management Plan

Thank you for your request from Public Authority Consultation (PAE-24878139) for the Environment Protection Authority (EPA)'s advice on the Air Quality Management Plan for Ardglen Quarry (MP06_0264-PA-14).

The EPA does not provide advice on or endorsement of any management plans developed for planning assessments.

Accordingly, the EPA will not be providing comment further to this request.

Please contact myself on (02) 6773 7000 or by email to armidale@epa.nsw.gov.au if you wish to discuss this matter further.

Yours sincerely,

LINDSAY FULLOON
Manager Regulatory Operations, Regional West

13. APPENDIX B – DUST MONITORING LOCATIONS AND RECEPTORS

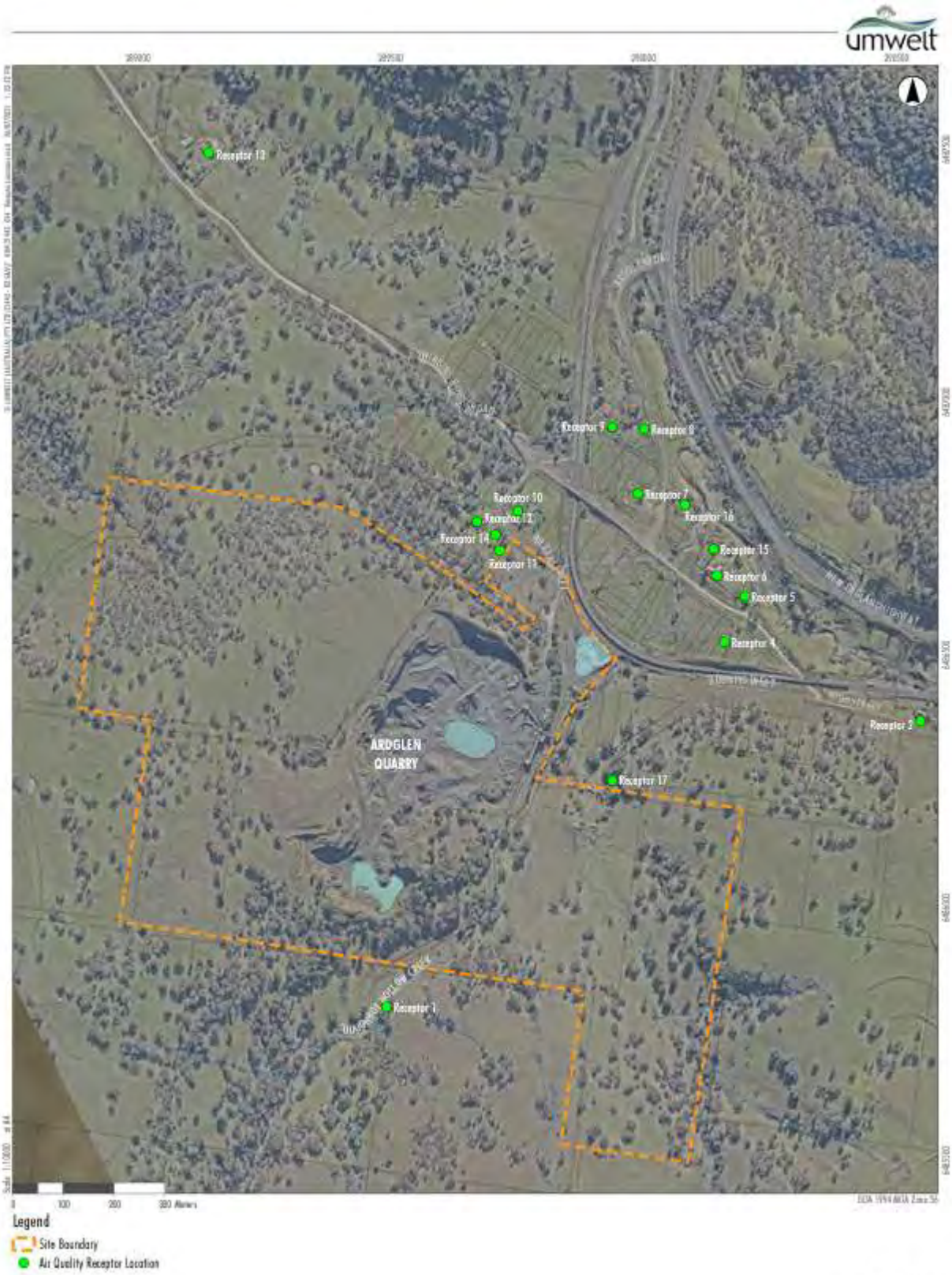

FIGURE 1.1

Air Quality Receptor Locations

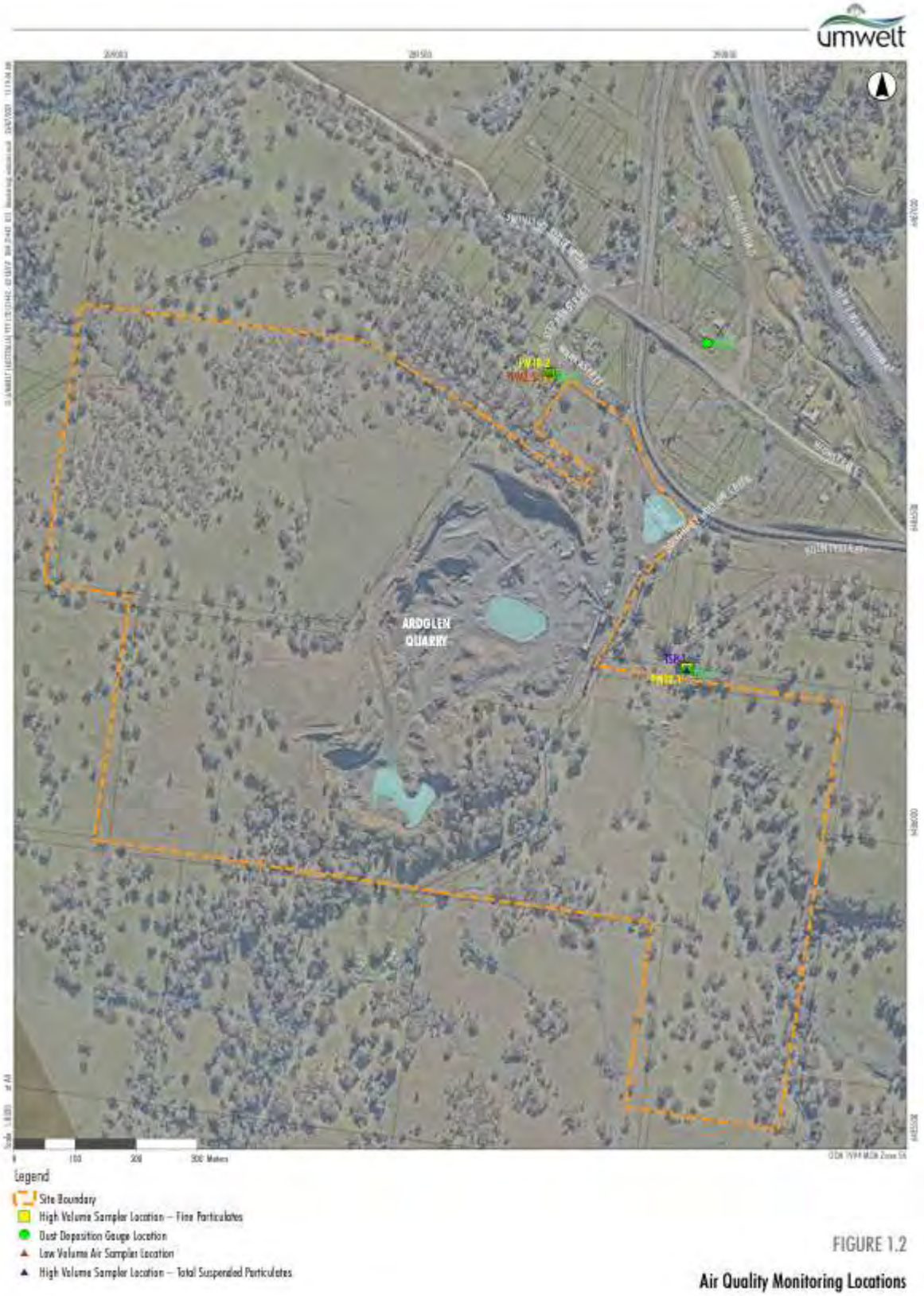

FIGURE 1.2

Air Quality Monitoring Locations

APPENDIX 7 Landscape Management Plan

umwelt
Environmental & Social Consultants

DARACON Group

LANDSCAPE MANAGEMENT PLAN

Buttai Gravel Pty Limited (Daracon Quarries)

DRAFT

August 2023

LANDSCAPE MANAGEMENT PLAN

Buttai Gravel Pty Limited (Daracon Quarries)

DRAFT

APPROVED COMPANY
ISO 9001
Quality Management Systems
QMS Certification Services

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
V1	Orogen	September 2010	Daracon	September 2010
V2	Daracon	August 2019	Luke Bettridge	August 2019
V3	Daracon	April 2020	Luke Bettridge	April 2020
V4 FINAL	Daracon	July 2021	Luke Bettridge	July 2021
V5	Daracon	December 2021	Luke Bettridge	December 2021
V6	Daracon	June 2022	Trescinda Brown	June 2022
V7	Daracon	December 2022	Luke Bettridge	December 2022
V8	Daracon	August 2023	Luke Bettridge	August 2023

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1.0 Introduction

1.1 Background

Ardglen Quarry (the Quarry) is located on Lot 218 DP 751028, Lot 1 DP 1001734, Lot 187 DP 751028, Lot 39 DP 751028 and Lot 49 DP 751028, adjacent to the small rural community of Ardglen. Ardglen is approximately 5 kilometres (km) northwest of Murrurundi and 60 km southwest of Tamworth. The Quarry is owned and operated by Buttai Gravel Pty Ltd (trading as Daracon Quarries).

NSW Railways owned and operated the Quarry for over 100 years prior to the purchase by Daracon. In 2008 Daracon was granted approval under Part 3A of the Environmental Planning and Assessment Act 1979, to extend quarrying activities into the adjacent lot west of the existing operation, Lot 218 DP 751028. In December 2010 Daracon was granted approval for a modification to the Project Approval (Mod 1) and most recently in March 2021 approval was granted for a second modification to the Project Approval (Mod 2) (the Project Approval).

The Project Approval permits:

- The extraction and processing of up to 500,000 (tpa)of material
- Transport of a combined total 500,000 tonnes/year of quarrying products from the site by road and/or rail by either:
    - transport of 250,000 (tpa)of quarrying products from the site by rail
    - transport of 500,000 (tpa) of quarrying products from the site by road
    - installation of noise management measures including barriers/bunds
    - modify the sediment basin, in pit sump and water treatment measures
    - import of up to 80,000 tonnes/year for blending with quarried materials.

The relevant Project Approval conditions and EA Commitments including where they are addressed this plan are provided in **Section 2.0**.

The operations undertaken at the Quarry are also required to be undertaken in accordance with the requirements of the EPBC Approval (EPBC2007/3442) which provides conditions related to the management of offsets and rehabilitation works required to be undertaken at the Quarry. These EPBC approval conditions and where they have been addressed in this document are detailed in **Section 2.2**.

Quarrying operations at the Quarry are undertaken it order to comply with the relevant provisions of all legislation relating to the project, as well as safeguards and mitigation measures identified within the Environmental Assessments (EAs) and Statement of Commitments (SoCs). Operations are conducted in accordance with the Project Approval to minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under the Project Approval.

1.2 Purpose and Scope

The purpose of this Landscape Management Plan (LMP) is to describe the rehabilitation and biodiversity management strategies, procedures, controls and monitoring programs to be implemented for the management of offset areas and rehabilitation required to be undertaken by Daracon. This LMP includes the following documents as required by the Project Approval:

- Draft Doughboy Hollow Creek Rehabilitation Strategy (in draft and not yet finalised however approval was given by DPE in November 2021 to prepare the LMP in a staged manner, and this covers the preparation of this Strategy. The approval from DPE is included in **Appendix 3**) (**Section 4.0**)
- Biodiversity Offset and Rehabilitation Management Plan (**Section 5.0**) and
- Quarry Closure Plan (**Section 6.0**).

This LMP has been developed to address the requirements of Schedule 3, Conditions 24 to 30A of the Project Approval and the EA Commitments.

Due to current operational status of the Quarry Site, considered to be a state of 'care and maintenance' as no extraction has occurred for a number or years, this LMP will be revised and submitted to relevant agencies for consultation on a progressive basis in accordance with Schedule 2, Condition 10 of the Project Approval, also refer to **Section 1.4**.

As outlined in the Project Approval, this LMP will be implemented during, and following quarrying operations at the Quarry.

Legend

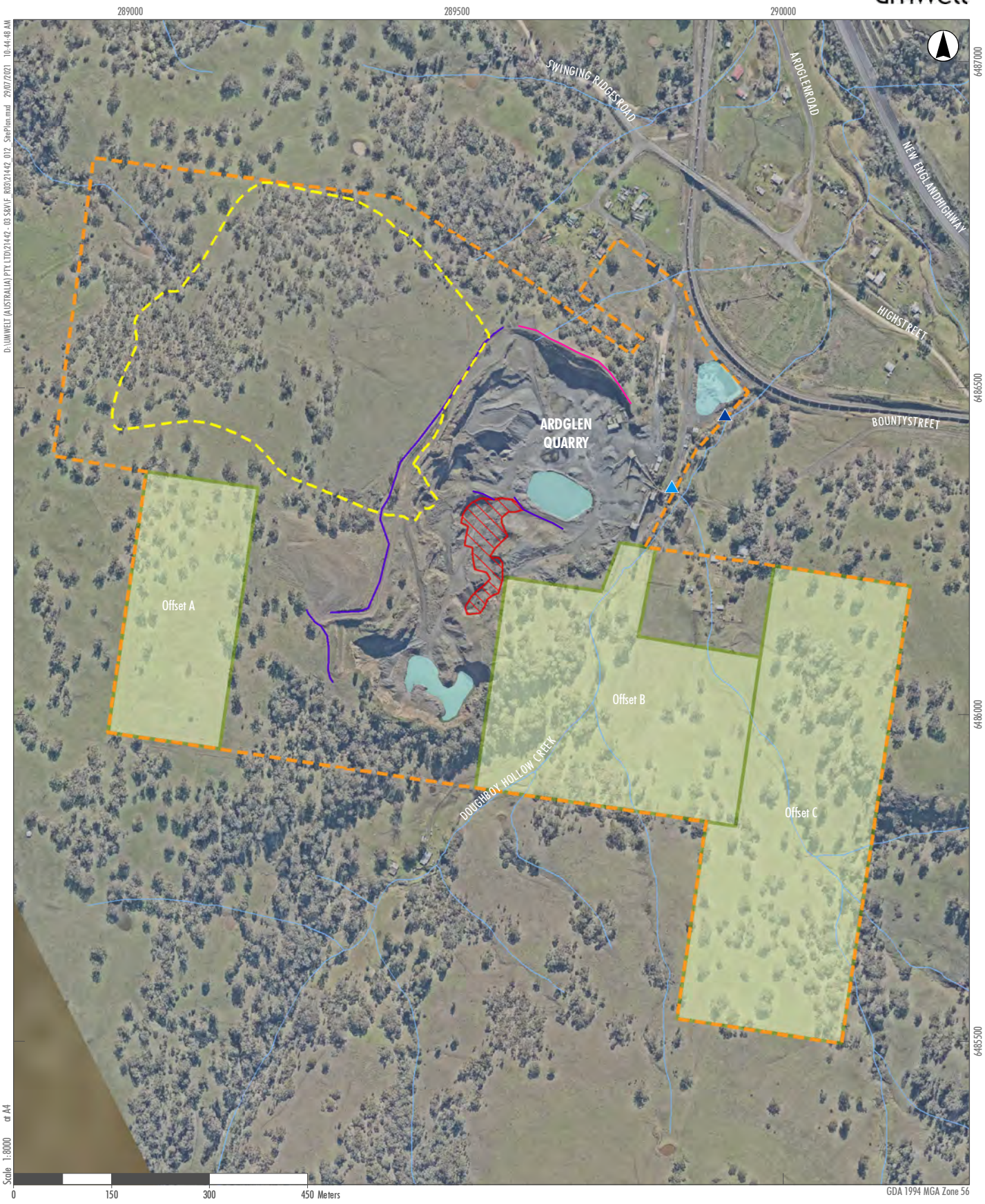
Site Boundary

Pit Extension Boundary

FIGURE 1.1

Locality

Image Source: ESRI Basemap Data source: NSW DFSI (2021)



Legend

- Site Boundary
- Pit Extension Boundary
- Biodiversity Offset Area Boundary
- Proposed Crushing Pad
- Noise Barrier
- Noise Bund
- Rock Weir along Doughboy Hollow Creek
- Causeway

FIGURE 1.2

Ardglen Quarry Site Plan

Image Source: Nearmap Data source: DFSI (2021)

1.3 Objectives of the LMP

The key objective of this LMP is to provide direction for the short, medium and long term management and enhancement of the rehabilitation and biodiversity values of the Quarry site including its offsets. The LMP also aims to provide a detailed description of the measures to be implemented to achieve this over the next 3 year and 5 year periods.

The objectives of this LMP are to:

- Identify and describe the areas of land that will be required to be managed in accordance with this LMP
- Provide clear and concise instructions for the management measures to be implemented in accordance with the Project Approval in order to achieve management objectives and minimise the impacts of key risks/threats
- Describe management measures, monitoring, performance evaluation and reporting procedures that are to be implemented at the Quarry
- Guide the restoration of grassy woodland and ongoing vegetation management within the three (3) 'offset' sites adjoining the Quarry.
- Describe the approach to rehabilitation of the section of Doughboy Hollow Creek.

The rehabilitation objectives to be achieved at the Quarry as defined by the Project Approval are detailed in **Section 2.1**.

1.4 LMP Staging

This LMP has been prepared as a staged LMP for Ardglen Quarry. The below **Table 1.1** defines the hold points which are required to be addressed at each stage, prior to Ardglen Quarry progressing to the next stage. An approved LMP which reflects the requirements of the following stage is required to be approved by DPE prior to Ardglen Quarry progressing to the next phase of operations. It is noted that **Table 1.1** below relates to actions specifically for the LMP, and that other management plans (e.g. Air Quality) may be required to be updated in accordance with the Project Approval prior to works being undertaken in the respective phases. These updates are addressed within the respective management plans.

Table 1.1 Ardglen LMP Staging

Staging	Aspects to be Addressed
Construction	All works required to be undertaken prior to the commencement of construction activities have been completed.
Care and Maintenance	Version 6 and Version 7 of the LMP have been developed to address the requirements to be implemented at Ardglen Quarry.
Construction and Operations Stage – Existing Footprint	Version 7 of the LMP has been developed to include the requirements to be addressed for the commencement of operations within the Site boundary for all areas outside of the "Pit Extension Area" as defined on **Figure 1.2**.
Construction and Operations Stage – Extension Area	Prior to the commencement of operations In the "Extension Area" (as defined in **Figure** 1.2), a revised LMP will be prepared by Daracon and submitted the DPE for approval. The revised LMP will be approved by DPE prior to the commencement of operations within the Extension Area. The revised LMP will include: • An Offset Strategy prepared in accordance with Schedule 3 Condition 25 of the Development Consent

	• Confirmation that Biodiversity Offset Areas have been secured in accordance with Schedule 3 Condition 26 of the Development Consent. • A revised Doughboy Hollow Creek Rehabilitation Strategy prepared in accordance with Schedule 3 Condition 28 of the Development Consent. The strategy will be prepared in consultation with BCS, DPIE, Crown Lands and DPI Water. • A revised Rehabilitation and Biodiversity Offset Management Plan developed in accordance with Schedule 3 Condition 29 of the Development Consent. • A Quarry Closure Plan developed in accordance with Schedule 3 Condition 30 of the Development Consent, except if Daracon have obtained the Planning Secretary's approval for an alternative timetable for completion and approval of the Quarry Closure Plan.
Quarry Closure and Rehabilitation Phase.	A revised LMP including a Detailed Quarry Closure Plan which builds upon the Conceptual Closure Plan will be developed either: • three years prior to the planned closure and rehabilitation of the operation, or • three years prior to the expiry of the Development Consent on 31 August 2038 (I.e 31 August 2035).

Legend

- Site Boundary
- Pit Extension Boundary
- Biodiversity Offset Area Boundary
- Permanenet Floristic Monitoring Plots
- Natural Regeneration Monitoring Plot

FIGURE 1.3

Ardglen Quarry Biodiversity Offsets

Image Source: Nearmap Data source: DFSI (2021)

2.0 Legal and Other Requirements

2.1 Project Approval

Table 2.1 below outlines the relevant Project Approval conditions and where they have been addressed within the LMP. This plan has been prepared by a suitably qualified expert whose appointment has been approved by the Planning Secretary (refer to **Appendix 1**).

The LMP was to be submitted to the Planning Secretary for approval within three months of the determination of MOD 2. However, Daracon notified DPE (formally DPIE) on 11 June 2021 of its intention to submit this LMP on or before 31 July 2021. DPIE subsequently approved this request on 06 October 2021. Between July 2021 and November 2021, the LMP was reviewed by DPIE, who then requested that Daracon apply for approval to submit the LMP in a staged manner. Daracon subsequently applied for this approval, which was granted by DPIE in November 2021.

Version 5 (V5) of this LMP was submitted to DPE for review in December 2021. Comments from DPE were received in May 2022, which commenced a further revision of the document, Version 6 (V6). V6 was submitted to DPE for review in June 2022.

As per Schedule 2, Condition 16 of the Project Approval, the Quarry will continue to apply the version of the LMP approved prior to the approval of MOD 2, until the approval of the LMP following the determination of MOD 2.

Table 2.1 Rehabilitation and Biodiversity Related Project Approval Conditions/Environmental Assessment Commitments

Condition	Description	Section/s Addressed
Schedule 2		
Obligation to Minimise Harm to the Environment		
1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	**Section 1.1**
Terms of Consent		
2	The Applicant must carry out the development a) generally in accordance with the EA;	**Section 1.1**
	b) generally in accordance with the EA MOD 2;	**Section 1.1**
	c) generally in accordance with the Statement of Commitments; and	**Section 1.1**
	d) in compliance with the conditions of this consent. *Note: The general layout of the development is shown in Appendix 1.*	**Section 1.1**
Revisions of Strategies, Plans or Programs		
15	Within three months of: a) the submission of an incident report under condition 3 of Schedule 5;	**Section 7.5**
	b) the submission of an Annual Review under condition 4 of Schedule 5	

Condition	Description	Section/s Addressed
	c) the submission of an Independent Environmental Audit under condition 5 of Schedule 5;	
	d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise) the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.	
16	The Applicant must continue to apply existing management strategies, plans or programs approved prior to the approval of MOD 2, until the approval of a similar plan, strategy or program following the determination of MOD 2.	**Section 2.1**
Schedule 3		
Rehabilitation		
24	The Applicant must progressively rehabilitate the site in a manner that is generally consistent with the conceptual rehabilitation principles and proposed rehabilitation strategy in the documents listed in condition 2(a)-(c) of Schedule 2 and as shown conceptually in Appendix 2 (of the Project Approval and must comply with the objectives in Table 11. **Table 11 Rehabilitation objectives**	**Section 5.3**

Feature	Objective
All areas of the site affected by the development	Safe
	Hydraulically and geotechnically stable
	Non-polluting
	Fit for the intended post quarrying operations land use(s)
	Final landform is integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land
Surface infrastructure	Decommissioned and removed, unless otherwise agreed by the Planning Secretary
Quarry benches and pit floor	Landscaped and vegetated using native tree and understorey species representative of Yellow Box White Box Blakely's Red Gum Woodland EEC
Overburden infill area	Backfilled areas integrated with surrounding natural landforms as far as is reasonable and feasible
	Emplacement areas integrated with the site water management system
	Establish grassland to support sustainable agricultural activities
	Use species found in the local area that are suitable for pasture production

Condition	Description	Section/s Addressed
Offset Strategy		
25	Prior to undertaking any works in the Extension Area, the Applicant must revise the Biodiversity Offset Strategy described in the EA and Response to Submissions (shown conceptually in Appendix 3), to the satisfaction of the Planning Secretary. The revised strategy must be prepared in consultation with the BCS and include additional areas where Yellow Box White Box Blakely's Red Gum Woodland EEC would be actively re-established within the identified Biodiversity Offset Areas shown in Appendix 3 (of the Project Approval).	**Section 5.2**
26	Prior to undertaking any works in the Extension Area (or other timeframe as agreed by the Planning Secretary), the Applicant must make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Areas to the satisfaction of the BCT.	**Section 5.2.6**
26A	By the end of June 2021, the Applicant must ensure that the Biodiversity Offset Areas are fenced to an appropriate standard to exclude stock access. The Applicant must maintain the exclusionary fencing over the life of the development, to the satisfaction of the Planning Secretary.	**Section 5.2.1.1**
Landscape Management Plan		
27	The Applicant must prepare a detailed Landscape Management Plan for the development to the satisfaction of the Planning Secretary. This plan must: a) be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary;	**Section 2.1 and Appendix 1**
	b) submitted to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary); and	**Section 2.1**
	c) include a: • Doughboy Hollow Creek Rehabilitation Strategy; • Rehabilitation and Biodiversity Offset Management Plan; and • Quarry Closure Plan. *Note: The Department accepts that the initial Landscape Management Plan may not include the detailed Quarry Closure Plan. However, if this occurs, the Applicant will be required to seek approval from the Planning Secretary for an alternative timetable for the completion and approval of the Quarry Closure Plan.*	**Section 4.0** **Sections 5.0** **Section 6.0**
Doughboy Hollow Creek Rehabilitation Strategy		
28	The Doughboy Hollow Creek Rehabilitation Strategy must: a) be prepared in consultation with BCS, DPIE Crown Lands and DPIE Water;	**Section 2.3**
	b) describe the measures that would be implemented to: • remove the weir from Doughboy Hollow Creek; • rehabilitate the creek within or directly adjacent to Lot 1 DP1001734 and Lot 39 DP 751028; and • rehabilitate and/or re-establish riparian vegetation within Lot 39 DP 751028.	**Section 4.4.2** **Section 4.4** **Section 4.4**

Condition	Description	Section/s Addressed
Rehabilitation and Biodiversity Offset Management Plan		
29	The Rehabilitation and Biodiversity Offset Management Plan must: d) be prepared by suitably qualified expert/s whose appointment/s have been approved by the Planning Secretary;	**Section 2.1**
	e) describe in general the short, medium, and long term measures that would be implemented to: • rehabilitate the site; • implement the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy; and • manage the remnant vegetation and habitat on the site;	**Section 5.3** **Section 5.0** **Section 5.3.2**
	f) include a detailed description of what measures would be implemented over the next 3 years to implement the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy;	**Sections 4.6** & **5.2.7**
	g) include a detailed description of what measures would be implemented over the next 5 years to rehabilitate the site, including the procedures to be implemented for: • progressively rehabilitating areas disturbed by quarrying as shown conceptually in Appendix 2 (of the project approval); • implementing revegetation and regeneration as shown conceptually in Appendix 2 (of the project approval), including establishment of canopy, sub-canopy (if relevant), understorey and ground strata; • managing the remnant vegetation and habitat on site; • managing impacts on fauna; • reducing the visual impacts of the development, including the vegetation of the noise barrier shown in Appendix 2 (of the project approval) and the establishment of screen planting as described in EA MOD 2 and the Statement of Commitments; • landscaping the site to minimise visual impacts; • protecting areas outside the disturbance areas; • conserving and reusing topsoil; • collecting and propagating seeds for rehabilitation works; • salvaging and reusing material from the site for habitat enhancement; • controlling weeds and feral pests; • controlling access; and • bushfire management;	**Section 5.3** **Section 5.3.2** **Section 5.3.2** **Section 5.3.1.1** **Section 5.3.1.1,** **Section 5.3.2.2** **Section 5.3.2.2** **Section 5.3.1.5** **Section 5.3.1.2** **Section 5.3.1.4** **Section 5.3.1.3** **Sections 5.2.1.2** & **5.2.1.3** **Section 5.2.1.1** **Section 5.2.1.4**
	h) detailed performance and completion criteria for the rehabilitation of the site and implementation of the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy;	**Sections 5.2.4** & **5.3.2.3**
	i) a detailed description of how the performance of the rehabilitation of the site and implementation of the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy would be monitored over time to achieve the relevant objectives and completion criteria;	**Sections 4.5,0** & **5.3.3**
	j) a description of the potential risks to successful revegetation and/or rehabilitation in the offset areas and development area, and a description of the contingency measures that would be implemented to mitigate these risks; and	**Sections 5.2.4** & **5.2.3**

Condition	Description	Section/s Addressed
	k) details of who is responsible for monitoring, reviewing and implementing the plan.	**Section 7.0**
Quarry Closure Plan		
30	The Quarry Closure Plan must: l) define the objectives and criteria for quarry closure;	**Section 6.1.1**
	m) investigate options for the future use of the site, including any final void(s);	**Section 6.1.2**
	n) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development; and	**Section 6.1.3**
	o) describe how the performance of these measures would be monitored over time.	**Section 6.1.3**
30A	The Applicant must implement the Landscape Management Plan as approved by the Planning Secretary.	**Ongoing**
Rehabilitation Bond		
31	Within 6 months of the approval of the Rehabilitation and Biodiversity Offset Management Plan, the Applicant must lodge a Rehabilitation Bond with the Department to ensure that the rehabilitation of the site is implemented in accordance with the performance and completion criteria set out in the plan and the relevant conditions of this consent. The sum of the bond must be an amount agreed by the Planning Secretary and determined by: a) calculating the cost of rehabilitating all disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and	**Section 5.1**
	b) employing a suitably qualified, independent and experienced person to verify the calculated costs. The calculation of the Rehabilitation Bond must be submitted to the Department for approval at least 2 months prior to the lodgement of the bond	**Section 5.1**
32	The Rehabilitation Bond must be reviewed and, if required, an updated bond must be lodged with the Department within 3 months following: a) calculating the cost of rehabilitating all disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and	**Section 5.1**
	b) the completion of an Independent Environmental Audit in which recommendations relating to rehabilitation have been made; or	**Section 5.1**
	c) in response to a request by the Planning Secretary.	**Section 5.1**
32A	If rehabilitation is completed generally in accordance with the relevant performance and completion criteria, to the satisfaction of the Planning Secretary, the Planning Secretary will release the bond.	**Section 5.1**
32B	If rehabilitation is not completed generally in accordance with the relevant performance and completion criteria, the Planning Secretary will call in all, or part of, the bond and arrange for the completion of the relevant works.	**Section 5.1**
Condition	**Description**	**Section/s Addressed**
Schedule 4		
Independent Review		
2	If a landowner (excluding quarry owned properties) considers that the operations of the development are exceeding the impact assessment criteria in Schedule 3 then he/she may ask the Planning Secretary in writing	**Section 7.4**

Condition	Description	Section/s Addressed
	for an independent review of the impacts of the development on his/her land.	
3	If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.	**Section 7.4**
4	If the Planning Secretary is satisfied than an independent review is warranted, within 3 months, or as otherwise agreed by the planning secretary and the landowner of the Planning Secretary's decision, the Applicant must: a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to: • consult with the landowner to determine their concerns • conduct monitoring to determine whether the development is complying with the relevant criteria in schedule 3 of this consent; and; • if the development is not complying with that criteria, identify measures that could be implemented to ensure compliance with the relevant criteria	**Section 7.4**
	b) give the planning secretary and landowner a copy of the independent review; and	**Section 7.4**
	c) comply with any written requests made by the planning secretary to implement any findings of the review	**Section 7.4**
Condition	**Description**	**Section/s Addressed**
Schedule 5		
Environmental Monitoring		
2	Any Condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.	**Sections 5.2.5 & 5.3.3**
Incident Notification		
3	The Applicant must immediately notify the department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.	**Section 7.2**
Non-Compliance Notification		
3A	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the	**Section 7.2**

Condition	Description	Section/s Addressed
	noncompliance (if known) and what actions have been, or will be, undertaken to address the noncompliance. *Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*	
Independent Environmental Audit		
5	Prior to 31 December 2012, and every 5 years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: a) be led by a suitably qualified, experienced and independent auditor whose appointment has been endorsed by the planning Secretary.	**Section 7.3**
	b) be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Planning Secretary) whose appointment has been endorsed by the planning secretary;	
	c) be carried out in consultation with the relevant agencies and the CCC	
	d) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licenses and mining leases for the development (including any assessment, strategy, plan or program required under these approvals);	
	e) review the adequacy of any approved strategy, plan or program required under the above mentioned approvals and this consent;	
	f) recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the above mentioned approvals and this consent; and	
	g) be conducted and reported to the satisfaction of the Planning Secretary.	
6	Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementations of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.	**Section 7.3**
Community Consultative Committee		
7	The Applicant must operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Planning Secretary, in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019)	**Section 7.1**
Access to Information		
8	Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Applicant must: a) provide a copy of the relent document/s to the relevant agencies and CCC; and	**Section 7.6**
	b) put a copy of the relevant document/s on its website	
9	During the development, the Applicant must: a) include a copy of this consent, as may be modified from time to time, on its website;	

<table>
<tr><th>Condition</th><th>Description</th><th>Section/s Addressed</th></tr>
<tr><td></td><td>b) provide a full summary of monitoring results required under this consent on its website; and</td><td></td></tr>
<tr><td></td><td>c) update these results on a regular basis (at least every 6 months).</td><td></td></tr>
<tr><td colspan="3">Statement of Commitments (Refer to Appendix 4 of Project Approval)</td></tr>
<tr><td>6</td><td>Biodiversity.
The proponent will implement the biodiversity offset strategy outlined in the EA, which includes the conservation and long-term protection of the areas described in Table 1.
Table 1 Biodiversity Offset Areas
<table>
<tr><th>Land Description</th><th>Area (ha)</th><th>Proposed Management Strategy</th></tr>
<tr><td>Lot 187 DP 751028</td><td>8.2</td><td>stock removal, weed control, planting of EEC trees, transport of logs and rocks, provision of nest boxes</td></tr>
<tr><td>Lot 39 DP 751028</td><td>11.65</td><td>stock removal, weed control, major planting of EEC trees and grasses, transport of logs and rocks</td></tr>
<tr><td>Lot 49 DP 751028</td><td>16.3</td><td>stock removal, weed control</td></tr>
<tr><td>Total</td><td>36.15</td><td></td></tr>
</table>
Responsibility: Daracon Quarries
Timing: Ongoing for the duration of the project.</td><td>Section 5.2</td></tr>
<tr><td>7</td><td>The proponent will prepare a detailed biodiversity offset management plan in consultation with the DECC and submit it for approval by the Director-General. The plan will include:
• proposed staging
• planting details such as final density, species mix, sowing rates, fertiliser, proposed maintenance schedule;
• proposed maintenance schedule;
• weed control;
• importation of rock and log shelter
• topsoil handling;
• fencing
• pre-clearance surveys of all hollow bearing trees within the proposed quarry extension area
• herbivore control; and
• number and location of nest boxes.
Responsibility: Daracon Quarries
Timing: Plan to be submitted for approval prior to work commencing within the Extraction Area.</td><td>Section 5.2 and 5.3</td></tr>
<tr><td>8</td><td>The proponent will make suitable arrangement to provide appropriate long-term security for the Offset Areas.
Responsibility: Daracon Quarries
Timing: Within 3 years of work commencing within the extraction area</td><td>Section 5.2.6</td></tr>
</table>

2.2 EPBC 2007/3442

Table 2.2 below outlines the relevant EPBC Approval (EPBC2007/3442) conditions and where they have been addressed within the LMP.

Table 2.2 EPBC 2007/3442 Approval Conditions related to Biodiversity and Rehabilitation

Condition	Description	Section/s Addressed
Biodiversity Offset Strategy		
1	The person taking the action must develop a Biodiversity Offset Strategy to protect and enhance White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland on Lots 187, 39 and 49 on DP751028 or an equivalent area. The Offset Strategy must specify:	**Section 5.2**
	a) The purpose of the Strategy including desired outcomes of implementing the Strategy;	**Section 5.2**
	b) The short (within 12 months from the date of this approval), medium (within three years from the date of this approval) and long term (within five years from the date of this approval) measures that would be employed to implement the Biodiversity Offset Strategy;	**Section 5.2.7**
	c) Strategies to create and enhance habitat linkages with surrounding woodland remnants;	**Section 5.2.2**
	d) Details of how the person taking the action will provide for the long-term security of the offset areas;	**Section 5.2.6**
	e) Procedures to be implemented for: i. Managing the remnant vegetation and habitat on site ii. Managing impacts on fauna iii. Protecting areas outside the disturbance areas iv. Controlling weeds and feral pests, and v. Controlling access	 **Section 5.3.1.1** **Sections 5.3.1.1** **Section 5.3.1.5** **Sections 5.2.1.2** & **5.2.1.3** **Section 5.2.1.1**
	f) Detailed performance and completion criteria for the implementation of the Biodiversity Offset Strategy;	**Section 5.2.4**
	g) A detailed description of how the performance of the implementation of the Biodiversity Offset Strategy would be monitored over time to achieve the objectives and completion criteria;	**Section 0**
	h) A description of the potential risks to successful rehabilitation in the offset area, and a description of the contingency measures that would be implemented to mitigate these risks; and	**Section 0**
	i) Details of who is responsible for monitoring, reviewing and implementing the strategy.	**Section 7.0**
Biodiversity Offset Strategy		
2	The person taking the action must develop a Rehabilitation Plan to rehabilitate the existing and proposed disturbed areas on Lot 218 DP 751028 and Lot 1 DP 1001734. The Plan must Specify:	**Section 5.3**
	a. The purpose of the Plan including desired outcomes of implementing the Plan;	**Section 5.3**
	b. Detailed performance and completion criteria for the rehabilitation of the site;	**Section 5.3.2.3**
	c. The short, medium and long term measures that would be employed to implement the Rehabilitation Plan;	**Section 5.3.4**

Condition	Description	Section/s Addressed
	d. Strategies to create and enhance habitat linkages with surrounding woodland remnants;	**Section 5.2.2**
	e. Procedures to be implemented for: i. Progressively rehabilitating areas disturbed by quarrying; ii. Implementing revegetation and regeneration within the existing and proposed disturbance areas, including establishment of a canopy, sub-canopy (if relevant), understorey and ground strata; iii. Protecting areas outside the disturbance areas; iv. Conserving and reusing topsoil; and v. Collecting and propagating seeds for rehabilitation works.	 **Section 5.3.2** **Sections 5.3.2.1, 5.3.2.2** **Section 5.3.1.5** **Section 5.3.1.2** **Section 5.3.1.4**
	f. A description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks;	**Section 5.3.2.3**
	g. Details of who is responsible for monitoring, reviewing and implementing the Plan.	**Section 7.0**

2.3 Stakeholder Consultation

In accordance with Schedule 3, Condition 27(a) and Condition 28 (a) of the Project Approval, the original Version 1 of this LMP has been prepared in consultation with the then DPIE and stakeholders as required by the Project Approval. Consultation undertaken with DPE in the preparation of this document is summarised in **Table 2.3** below and included in **Appendix 1.**

Table 2.3 Consultation undertaken for the Landscape Management Plan

LMP Version	Date	Consultation Undertaken With
Version 1	2010	DPIE, OEH
Version 2	2019	*DPIE - The draft plan has been submitted to OEH however no comments have been received to date.*
Version 3	April 2020	*DPIE - Biodiversity and Conservation Division (BCD) (formerly OEH) - Comments received from the BCD in August 2019. Response to the BCD's comments were provided by Daracon to DPIE on 18 September 2019. Commitments detailed in this response have been included in the current revision of the LMP.*
Version 4	July 2021	*DPIE – Initial comments received from DPIE in September 2021. DPIE requested approval to be sought for submission of the LMP on a progressive basis and for this to be indicated in Section 1 of the LMP. DPIE also requested clarification of the last dot point in Table 4.1. Comments have been addressed in Version 5 of the LMP.*
Version 5	December 2021	*This version of the LMP will be submitted concurrently to DPIE for comment via the DPIE Planning portal.*
Version 6	June 2022	*This version of the LMP will be submitted DPE for comment via the DPE Planning portal.* *Note, further consultation will be undertaken with the appropriate stakeholders during the finalisation of the Doughboy Hollow Creek Rehabilitation Strategy. This document is currently in draft therefore consultation has not yet occurred. This LMP will be updated to reflect consultation at the appropriate time.*
Version 7	December 2022	This version of the LMP will be submitted DPE for comment via the DPE Planning portal. Note, further consultation will be undertaken with the appropriate stakeholders during the finalisation of the Doughboy Hollow Creek Rehabilitation Strategy. This document is currently in draft therefore consultation has not yet occurred. This LMP will be updated to reflect consultation at the appropriate time.
Version 8	August 2023	This version of the LMP will be updated to final once consultation has been undertaken in regard to the finalisation of the Doughboy Hollow Rehabilitation Strategy. This document is currently in draft therefore consultation has not yet occurred. This LMP will be updated to reflect consultation at the appropriate time.

Version 1 (V1) of the LMP was prepared in consultation with the regulatory authorities as required by the Project Approval. During the revision of the LMP for this Version 2 (V2), Daracon consulted with DPIE (now DPE) on 2 November 2018 regarding DPIE providing approval of the suitably qualified person to prepare this revision of the LMP. DPIE advised on 2 November 2018 that DPIE do not approve consultants for the purpose of updating management plans and that Daracon were to proceed with updating the LMP. Comments were received from the Biodiversity Conservation Trust (BCT) on 13 August 2019. The BCT advised that additional information was required in relation to the Doughboy Hollow Creek Rehabilitation Strategy, short, medium and long term offset targets and objectives and offset monitoring methodology. Daracon provided response to the DPIE regarding the BCT comments on 18 September 2019 which included commitments to address these aspects in subsequent reviews of the LMP. Agency comments are presented in **Appendix 1**.

Daracon are continuing to liaise with the DPE and the BCT to assist in the determination of the most appropriate mechanism for securing the Quarry offset properties (refer to **Section 5.2.6**). Since the last version of this LMP (Version 3 – April 2020), Daracon have determined that a Conservation Agreement is the preferred mechanism for securing the offset properties. Daracon are currently in the process of finalising this agreement with the BCT and a draft Conservation Agreement (No CA0363) has been received by Daracon.

Note, further consultation will be undertaken with the appropriate stakeholders during the finalisation of the Doughboy Hollow Creek Rehabilitation Strategy. This document is currently in draft therefore consultation has not yet occurred. This LMP will be updated to reflect consultation at the appropriate time. Note that in 2021 DPE granted Daracon approval to submit this LMP in a staged approach.

3.0 Ardglen Quarry Environmental Setting

3.1 Topography

The Ardglen Quarry and Offset Areas can be characterised as occurring on moderately steep and rocky hillslopes which contain ephemeral gullies. Elevation ranges from approximately 650 – 750 m AHD.

3.2 Geology and Soils

The Ardglen Quarry and Offset Areas are mapped as being underlain by Liverpool Range beds comprised of basalt, dolerite, polymictic conglomerate, quartzose sandstone, shale and bole (1:250,000 Tamworth Geological Map Sheet, Gesoscience Australia). Site observations revealed that basalt weathers to a 10 - 15 m deep brown clay subsoil (Orogen, 2010).

3.3 Vegetation

A total of four vegetation communities were recorded during an initial site inspection by Orogen on the Quarry expansion and Offset Areas in 2010 (Orogen, 2010). During the 2019 spring offset monitoring, these vegetation zones were assigned a Plant Community Type (PCT) in order to be comparable with the PCT benchmarks and track condition and progress over time. These PCTs have been described using floristic data, broad-scale vegetation mapping and using knowledge of the local topography and landscape. The vegetation zones recorded by Orogen with their corresponding PCT, allocated by Umwelt, are outlined in **Table 3.1** below.

Table 3.1 Vegetation Zones with Corresponding PCTs

Vegetation Zone and Description (Orogen 2010)	PCT Name
Blakelys Red Gum (+/- Yellow Box) Dry Sclerophyll Grassy Woodlands/Open Woodland on the steep, rocky hillslopes and hillcrests. Associated canopy species comprised red stringybark (*E. macrohyncha*), Blakely's red gum (*E. blakelyi*), yellow box (*E. melliodora*) and brittle gum (*E. mannifera subsp praecox*).	PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion.
River Oak (*Casuarina cunninghamiana*) Dry Sclerophyll Woodland along sections of the ephemeral/semi-permanent Doughboy Hollow Creek adjoining the quarry.	PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion).
White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland along some of the ephemeral gullies and lower hillslopes on the offset sites.	PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion.
Derived grassland supporting a heavily degraded pasture dominated by the native grazing tolerant grass *Bothriochloa macra* and the perennial exotic grass *Paspalum dilatatum*. This dominant understorey state formed a mosaic in places with other grazing tolerant native perennial grasses *Austrodanthonia richardsonii* and *Austrostipa scabra* along with mostly exotic annuals and perennials Scattered swards and patches of other native grasses and forbs indicated a pasture with at least a partially intact native soil seedbank.	PCT 796 - Derived grassland of the NSW South Western Slopes.

4.0 Doughboy Hollow Creek Rehabilitation Strategy

4.1 Introduction

Doughboy Hollow Creek is a non-permanent watercourse, which flows in response to rainfall run-off from the surrounding hills and meanders through one of the three offset sites, this being Offset Area B (refer to **Figure 1.2**.) It is understood that a small weir was established on the creek in the past as the water supply access point for the Quarry. As quarry operations primarily utilise an in-pit sump for water supply purposes, water will only be accessed at this location in accordance with the relevant active Water Access Licences. In addition, a small causeway located approximately 200 m north of the weir provides access across Doughboy Hollow Creek. The location of the causeway and weir is included on **Figure 1.2**.

In May 2022, a site inspection of the Doughboy Hollow Creek, including both the Causeway and Weir was undertaken by Darren Lyons of Umwelt, a suitably qualified consultant, to review status of vegetation and erosion within Doughboy Hollow Creek as an update of the baseline inspection undertaken in 2010.

In June 2023, a site inspection of Doughboy Hollow Creek and the surrounding riparian areas was undertaken by Amber Wilson, Senior Ecologist at Umwelt to establish a new baseline indication of native vegetation and weed coverage, species composition and to document the existing environment of the creek.

4.2 Objectives and Consent Conditions

The objectives of this rehabilitation strategy are to provide a structure to underpin the rehabilitation and restoration process of Doughboy Hollow Creek that will improve biodiversity values in this area and provide a safe and stable landform.

The Doughboy Hollow Creek Rehabilitation Strategy has been prepared to meet the requirements of Schedule 3 Condition 28 of the Development Consent (06_0264). Condition 28 has been reproduced below:

a. be prepared in consultation with BCS, DPIE Crown Lands and DPIE Water;

b. describe the measures that would be implemented to:

   i. remove the weir from Doughboy Hollow Creek;

   ii. rehabilitate the creek within or directly adjacent to Lot 1 DP1001734 and Lot 39 DP 751028; and

   iii. rehabilitate and/or re-establish riparian vegetation within Lot 39 DP 751028.

   iv. Actions to be undertaken to meet these consent conditions are outlined further in Section 4.4.

4.3 Existing Environment

Doughboy Hollow Creek is a third order stream at the point that it enters the Study Area (refer to **Figure 4.1**). The creek itself can be described as a shallow-incised, rocky (basalt) ephemeral stream, with varying levels of erosion throughout its course. A small causeway crosses its course in the north of the Study Area, and a rocky weir crosses again 200 m south of this point.

The Study Area encompasses a roughly 20 m buffer from the centreline of the creek. The northern extent of the Study Area is bounded by a concrete culvert underneath a rail embankment through which the creek is channelled. The southern extent of the Study Area is bounded by the Offset B boundary. To the east, the Study Area is bounded by a gravel track, and to the west, there is a fence line, and existing infrastructure in the form of sheds and part of the processing plant intersects with the Study Area, see **Figure 4.1**.

Ardglen Quarry lies west of the creek line and pastoral land with scattered remnant trees occur to the east. The ephemeral creek meanders through the small valley, with the landscape forming a greater slope on the western side coming down from the Quarry. The channel is a relatively shallow incised channel of approximately 2-3 m wide, and the bed is of a rock structure. The creek is reasonably healthy, with a desirable pool-riffle sequence, and evidence of a range of macro-invertebrate species using the watercourse. See **Photo 4.1** and **Photo 4.2** for details.

The riparian vegetation within the Study Area is almost entirely exotic, with only small areas of remnant vegetation. The canopy is largely comprised of woody weeds such as willow (*Salix sp*.) and large-leaved privet (*Ligustrum lucidum*), with a single apple tree (*Malus sp.*) occurring on the east bank. Between the weedy overstory, stands of river oak (*Casuarina cunninghamiana*) persist and remnant Eucalypts are scattered along both creek banks. The midstorey is almost entirely comprised of thick stands of small-leaved privet (*Ligustrum sinense*). Dense blackberry (*Rubus sp*.) thickets and some native shrubs such as sifton bush (*Cassinia sp*.) also occur in patches along the creek line. The ground layer is dominated by exotic perennial grasses, predominantly kikuyu (*Cenchrus clandestinus*) and Phalaris (*Phalaris aquatica*) and some areas with a significant coverage of invasive fennel (*Foeniculum vulgare*). These groundcovers particularly thrive in sections of the creek banks which are devoid of any overstorey. Madeira vine (*Anredera cordifolia*) is also present in the southern area of the Study Area. The vegetation community that occurs along the creek line most closely represents PCT 84 River Oak - Rough-barked Apple - red gum - box riparian tall woodland (wetland) of the Brigalow Belt South Bioregion and Nandewar Bioregion, however the vegetation is considered to be in very poor condition.

The soil at the Study Area varies in composition and depth, with evidence of bank erosion at a small number of points along the creek line (see **Photo 4.3**). The substrate in northern area of the Study Area is rocky and contains aggregate and quarry rubble within the soil matrix. The substrate along the causeway is almost entirely comprised of blue metal aggregate. At the southern extent of the Study Area, deeper alluvial soils occur.

Redundant rail infrastructure including scrap metal is present both within the creek and embedded into the banks along the extent of the creek, but most of this occurs towards the southern end of the Study Area.

Legend

- Study Area
- Existing Infrastructure
- Biodiversity Offset Area Boundary
- Doughboy Hollow Creek
- Rock Weir along Doughboy Hollow Creek
- Causeway

FIGURE 4.1

Doughboy Hollow Rehabilitation Strategy Study Area

Image Source: Esri (2023)**Data source:** NSWSS (2023)

Photo 4.1 Doughboy Hollow Creek near to the causeway

Photo 4.2 Doughboy Hollow Creek looking South near to the existing quarry infrastructure

Photo 4.3 Erosion in the South of the Study Area near to the Offset Area boundary

4.4 Rehabilitation Strategy

4.4.1 Regulator Consultation

As per the requirement of Schedule 3, Condition 28 of the Project Approval, consultation will be undertaken with BCS, DPE, Crown Lands and DPE Water. Preliminary consultation has been undertaken with BCS, Crown lands and DPE in early 2023 to understand and confirm the approach to be undertaken in regards to the development of the Doughboy Hollow Rehabilitation Strategy. It is intended that the first draft document will be sent to relevant Departments for comment. Feedback from this consultation will inform the contents of the final document, which will then be submitted to each Department for final review.

It is proposed that an Umwelt restoration ecologist will conduct a site inspection of the Study Area with a representative from each agency noted above to further consult upon the outcomes of this strategy before the submission of this document for DPE consideration.

4.4.2 Rock Weir Removal

A rock weir had previously been constructed on Doughboy Hollow Creek just outside the Quarry's central eastern boundary (east of the plant crusher and approximately 200 m south of the causeway) refer to **Figure 1.2**. The weir was reportedly constructed so that the former Ardglen Quarry operator could extract water for its processing operations.

The weir is no longer discernible as a structure and is currently underwater. A riparian condition and flow modelling assessment undertaken by Umwelt (Umwelt, 2023) found that the weir structure has minimal influence on broader stream flow conditions and given the limited height of this structure above natural bed level provides for limited backwater influence (magnitude and extent) upstream in low flow conditions. This assessment concluded that the removal of the weir is expected to provide no net improvement to the overall condition and ecological value of Doughboy Hollow Creek. This was further confirmed during an inspection in 2023. It is therefore not recommended that this structure is removed. The removal would likely result in degradation to the surrounding area providing no ecological benefit.

4.4.3 Riparian Vegetation Restoration

The Project Approval conditions require that riparian vegetation be re-established along Doughboy Hollow Creek. In accordance with Project Approval Schedule 3, Condition 28, Daracon will rehabilitate sections of the creek within or directly adjacent to Lot 1 DP 1001734 and Lot 39 DP 751028, however it is important to note that Lot 39 DP 751028 (Offset Area B) is land that is under a Conservation Agreement (refer to **Figure 1.3**). Daracon will re-establish riparian vegetation within Lot 39 DP 751028 in line with the management actions set out in the Conservation Agreement.

The existing condition of the riparian corridor will require a carefully managed restoration strategy to limit the risk of further creek line erosion, reduced water quality and to maintain connectivity along the creek line. The main objective will be to re-establish native vegetation that is representative of riparian vegetation known to occur in the wider locality. The poor conditions of the creek line and modified creekbanks and surrounds, will make it difficult to establish a PCT to meet benchmark conditions (as set out in the NSW Vegetation Classification database), therefore it is proposed the objective of restoration should be to establish vegetation species composition characteristics associated with riparian communities such as the PCT 84 River Oak - Rough-barked Apple - red gum - box riparian tall woodland (wetland) of the Brigalow Belt South Bioregion and Nandewar Bioregion.

The restoration of the riparian area will require the following management actions to ensure native vegetation is re-established across the riparian corridor:

- Weed control
- Rubbish removal
- Bank stabilisation works (in channel works subject to monitoring identifying the need for bank stabilisation works and additional approvals as necessary)
- Site preparation and Revegetation
- Ongoing weed control and in fill planting (maintenance).

4.4.3.1 Weed Control

Daracon proposes to undertake a weed control program to decrease the density of exotic species (primarily high threat weed species) within the Study Area to restore natural biodiversity.

Weed control would be undertaken across the Study Area initially focusing on high threat woody weed and vine species, in preparation for revegetation works. Ideally, all large woody weeds such as willows (*Salix sp*.) and apple (*Malus sp*.) would be treated in Year One of the program with a focus on direct herbicide treatment by methods such as drill and fill and retaining the trees in-situ to provide bank stability and habitat for perching and roosting fauna species.

The remaining woody weeds such as large leaved privet (Ligustrum lucidum) and small leaved privet (*Ligustrum sinense*) would be removed in a progressive manner with priority given to areas surrounding any native canopy species or small patches of native vegetation. Focus would then transition on moving from the southern boundary towards the rail line. This method allows for the improvement of areas around existing native vegetation and the option of breaking up the restoration area into smaller management units therefore allows the staggering of weed control and revegetation works.

The other major woody weed is blackberry (*Rubus sp.agg*.). This is another species that will benefit from early control, in particularly in areas of revegetation. Early treatment will focus on slashing and herbicide treatment of regrowth during active growing periods, with persistent follow up control to limit the re-establishment of this species.

The vine weed madeira vine (*Anredera cordifolia*) was observed growing within native canopy species within the Study Area. The control of this species will be prioritised in the early years (1-2) of management to allow for appropriate control prior to revegetation works. Treatment of this species will be determined based on location with a mix of herbicide and manual removal.

The remaining weeds within the riparian corridor are generally lower priority groundcover species that will provide bank stability; therefore the treatment of these species will only occur in preparation for revegetation works and progressive control to allow natural recruitment to occur.

The weed control strategy will be guided by the extent of revegetation that is feasible in the following 12-24 months (with the exception of large woody weeds) to minimise risks to the Study Area.

4.4.3.2 Bank Stabilisation

Restoration works within the Study Area will be undertake in manner that would limit large areas of creekbank being exposed to erosion and stability risk. It is not proposed to implement extensive bank stabilisation works as currently the banks appear stable. Bank stabilisation works may be required periodically to ensure any active erosion areas are contained.

Bank stabilisation work may include:

- The use of Rip rap scour protection where obvious signs of high velocity water is eroding creek banks
- Minor erosion slumps or areas observed to have a risk of soil loss would be retained using cut timber and branches from woody weed biomass as erosion control measures (seed free at the time of install)
- Soil stabilisation through the use of jute mesh in highly erodible areas.

The monitoring program will assess erosion status and success of erosion mitigation measures annually as outlined in **Section 4.5**.

4.4.3.3 Rubbish Removal

There are some components of the redundant rail infrastructure (e.g. fencing, corrugated sheeting) that can be readily removed from the creek whereas other components are embedded within the creek bank. To remove these components may cause structural issues and damage to the creek banks themselves, however leaving them in situ could cause further scouring issues in the future. Where practicable and where there is a low risk to increasing erosion, rubbish would be removed from the riparian zone. The use of machinery would be limited to equipment that will not damage or exacerbate erosion to the creek banks and wider riparian area. The removal of material will be discussed in the field as part of the site inspection to be undertaken with regulatory authorities as part of the consultation on this plan.

4.4.3.4 Revegetation

As there is currently minimal native vegetation, the natural regeneration capacity of the Study Area is likely to be limited. Planting is proposed to assist the re-establishment of native vegetation within the riparian corridor.

The aim of revegetation works will be to increase native species composition and cover with a focus on the re-establishment of a canopy and shrub layer. The dense exotic ground cover currently provides a form of erosion protection therefore the control of these species would be progressive. Groundcover revegetation should only be used where there is a benefit of increasing stability to creek banks through the use of small shrubs and sedges.

Prior to revegetation, site preparation works will be required where exotic groundcover is dense and would compete with installed tubestock. Site preparation (as detailed in **Table 4.2**) would include at a minimum:

- Slashing of exotic groundcover
- Two applications of herbicide (at least 6 weeks apart) by spot spraying tree rings at the density proposed for tree and shrub planting in **Table 4.2**. Spot spraying in patches proposed for tubestock application is preferable to broad acre spraying which increases the risk of widespread weed colonisation over time.

Revegetation works will include:

- Plants should be installed using methods such as auger drilled holes or hand mattocks to provide sufficient lose material to back fill each tube in the ground.
- Installation of tubestock at densities recommended in Table 4.1
- At the time of install each plant will have a soil conditioning medium (Terraform) applied to improve growth of each plant and watered with a minimum of 1 litre of water

- Plant guards should be installed as required to reduce grazing from native and feral animals and should be considered based on monitoring results
- Maintenance of installed tubestock should occur on as needs basis through the cooler months with a minimum of monthly maintenance visits for the proceeding spring and summer periods. Maintenance will include, weed control, water (if required).

All revegetation works should occur during the cooler months from April -September each year, and favour times after rain to ensure sufficient soil moisture is present.

Revegetation will utilise species from the indicative planting list below (refer to Table 4.1). Please note that this list is indicative, and guidance would be sought by a professional bush regenerator prior to revegetation works.

Table 4.1 Indicative Planting List

	Common name	Scientific name	Planting density - riparian corridor
Canopy	River Oak Blakely's Red Gum Rough-Barked Apple Ribbon Gum Yellow Box White Box White Cedar	*Casuarina cunninghamiana* *Eucalyptus blakelyi* *Angophora floribunda* *Eucalyptus viminalis* *Eucalyptus melliodora* *Eucalyptus albens* (upper banks) *Melia azedarach*	1 stem / 10m^2
Mid-storey	Weeping Bottlebrush Hickory Wattle Blackthorn Native Olive Cough Bush Tantoon Cheese Tree	*Callistemon viminalis* *Acacia implexa* *Bursaria spinosa* *Notelaea microcarpa* *Cassina laevis* *Leptospermum polygalifolium* *Glochidion ferdinandi*	1 stem / 5m^2
Other	Tall Sedge Spiny-Headed Mat-Rush	*Carex appressa* *Lomandra longifolia*	1 plant /m^2

Note: Species list has been comprised of native species identified during site inspections and references species which likely occurred before disturbance (derived from PCT 84 River Oak - Rough-barked Apple - red gum - box riparian tall woodland (wetland) of the Brigalow Belt South Bioregion and Nandewar Bioregion).

4.4.3.5 Schedule of Works

Table 4.2 provides an indicative schedule of works and performance criteria that is proposed to restore the riparian vegetation.

Table 4.2 Indicative Doughboy Hollow Works Schedule and Performance Criteria

Management Action	Description	Performance Criteria	Timing
Weed Control			
Primary woody weed control	Control of all large willow and apple tree species within the Study Area and left in-situ	All large willow and apple tree species would be treated at least once with appropriate control method	End of Year 1
	Control of large-leaf and small leaf privet by appropriate best practice methods such as cut and paint. Control of blackberry through slashing and herbicide treatment of regrowth during active growth period.	50% reduction of baseline cover	End of Year 1
		All primary control of woody weeds complete. No mature individuals alive	End of Year 2
Primary control of vine weeds	Primary control of madeira vine using best practice weed control methods e.g. scrap and paint, hand removal	90% reduction of baseline cover	End of Year 1
Follow up weed control	Follow up woody weed and vine control	<5% cover of woody weeds	End of Year 3
Maintenance weed control	Maintain woody and vine weed control	Maintain <5% cover	On-going from Year 4
Reduction of grassy and herbaceous weed species	Continued reduction of groundcover weed species to promote native species recruitment	<50% groundcover weed cover	End of Year 5
Bank Stabilisation			
Creek Bank Inspections	Assess the state of erosion and to determine if stabilisation works are required.	No active erosion observed within the Study Area	Annually
Revegetation/Planting			
Tubestock germination	Order predetermined tubestock at least 6-12 months prior to planting	Appropriate species selected fromTable 4.1 are ready for installation 2 weeks prior to planting	Winter Year 2-3
Site Preparation works - Slashing	Slashing of revegetation areas	Complete at least 3 months prior to planting in Autumn- Winter	Complete prior to winter plantings Years 2 and 3
Site Preparation Works - Primary grass and herbaceous weed control	Treatment of groundcovers in preparation for revegetation works – spot spraying tree rings (min. 500mm diameter)	All tree rings treated at least twice prior to planting (6 weeks apart)	

Management Action	Description	Performance Criteria	Timing
Tree Planting	Installation of tubestock and soil conditioner in prepared planting areas at densities specified in Table 4.1	All trees installed and watered.	Autumn-Winter Year 2-3
Tree maintenance	Maintain a weed free tree ring through establishment	Tubestock alive and weed free	As required or at monthly intervals from spring after planting.
	Install tree guards as required	Trees are free of evidence of browsing	As required after planting.

4.5 Monitoring Program

A minimum of two permanent monitoring sites will be established in order to compare the pre-and post-rehabilitation condition of the Study Area and track the trajectory of the Study Area's condition over time.

- Baseline monitoring (prior to commencement of management) will involve the following:
- Establishment of a minimum of two monitoring plots (10 x 40 m) within the Study Area, delineated in the north east corner by a star picket or similar
- Establish baseline native vegetation condition (plots) using the Biodiversity Assessment Method (BAM)
- Establish baseline weed cover for the Study Area to inform performance criteria. Weeds should be grouped into similar growth groups woody weeds, vines, grassy and herbaceous weeds
- Conducting photo monitoring at these monitoring points, facing into the plot to the south west
- Establishment of a list of weeds with high invasive potential with current infestations on the Study Area based on Weeds of National Significance, High Threat Weeds listed under the BAM, and Biosecurity Weeds listed for the Hunter region
- Establish general notes on health and condition of the creek, including erosion status and success of erosion mitigation measures.

After the first year of management actions have been completed, the monitoring program will commence in accordance with **Table 4.3**.

Table 4.3 Monitoring Schedule

Method of Monitoring	Baseline	Timing
Establish 2 x biodiversity monitoring plot in accordance with the BAM	Yes	Year 1,2,3,4, 5
Photo monitoring point	Yes	Annual
Weed density mapping	Yes	Annual
Annual inspection (Site condition review against performance criteria)	Yes	Annual
Tree stem count	At time of install	Annual

The monitoring program will involve a baseline (pre-rehabilitation) event, followed by four, annual monitoring events to form five years of monitoring. Following the fifth year, the performance of the Study Area against the completion criteria would be reviewed, with further monitoring or actions recommended at this point. The progress of this strategy would be reported annually and included as part of the Annual Review completed for the Quarry as outlined in **Section 7.0**.

4.6 Short Medium and Long Term Management Measures

Table 4.4 outlines the short, medium and long term actions to be implemented over the next five years.

Table 4.4 Doughboy Hollow Creek Actions to be implemented 2023 - 2028

Task	Details of task	Due Date /Timing
Short Term		
Doughboy Hollow Creek Rehabilitation Strategy	The review of rehabilitation works required will include: • Consultation with DPE, BCS, DPE Crown Lands and DPE Water regarding proposed rehabilitation works, performance criteria, monitoring program, and any approval requirements. Note that this consultation has not yet been undertaken as the Strategy has not been finalised for submission to DPE; and • Following consultation with DPE, BCS, DPE Crown Lands and DPE Water a revision of this LMP will be developed to include the works program and detail actions required to be undertaken at Doughboy Hollow Creek specifically during the following 5 year period.	To be approved by DPE prior to quarrying being undertaken in the Extension Area as identified in the Project Approval.
Establishment of Monitoring Program Baseline	Establishment of monitoring points and collection of baseline data as per **Section 4.5**.	Following acceptance and endorsement of Doughboy Hollow Rehabilitation Strategy, but prior to commencement of rehabilitation works.
First Year Rehabilitation Strategy Components	As outlined in the Rehabilitation Strategy, first year components involve: • Control of weeds as per **Section 4.4.3.1** • Removal of metal waste; and • Bank stabilisation works (if required).	Within one year following acceptance and endorsement of Doughboy Hollow Rehabilitation Strategy.
Medium Term		
Second Year Rehabilitation Strategy Components	As outlined in the Rehabilitation Strategy, second year components involve: • Control of weeds as per **Section 4.4.3.1**; and • Revegetation.	Within two years following acceptance and endorsement of Doughboy Hollow Rehabilitation Strategy.
Commencement of Monitoring Program	Commencement of monitoring program and comparison to baseline data where applicable, as per **Section 4.5**.	Annually following commencement of rehabilitation works.

Task	Details of task	Due Date /Timing
Long Term		
Ongoing weed control and plantings	Ongoing weed control from years 3 – 5 as per **Table 4.2.** Ongoing plantings if survivorship threshold is not met.	Within five years of commencement of rehabilitation works.
Ongoing monitoring	Annual monitoring for the first five years. Review against completion criteria to inform whether further monitoring or corrective action is required.	Annually for the first five years with review against completion criteria to inform whether further monitoring is required.

4.7 Completion Criteria

The completion criteria for the Doughboy Creek Rehabilitation Strategy are detailed in the **Table 4.5**.

Table 4.5 Doughboy Hollow Completion Criteria

Aspect	Performance and Completion Criteria	Trigger	Potential Corrective Action
Vegetation Establishment	Revegetation program is undertaken in Year 2/3 of the program. Species planting list follows that which is outlined in **Section 4.4.3.4**.	<80% of the installed tubestock matches the planting list.	Rework or supplementary planting is undertaken.
	Following the implementation of the revegetation program, more than 80% of planted tube stock have survived in each of the planting areas.	Annual monitoring indicates that less than 80% of plants have survived within four years post planting.	Supplementary planting is undertaken.
Weed cover	Woody weed coverage is less than 5% within five years from the commencement of the strategy.	Woody weed and vine coverage is over 5%.	Further weed control works until this parameter is achieved.
	Exotic species cover in lower stratum.	Exotic species coverage is more than 50% in the lower stratum.	Further weed control until this parameter is achieved.
Erosion	Banks are stable and no active erosion occurring within the Study Area.	Active erosion observed within the Study Area.	Bank stabilisation works or application of ameliorative strategies such as jute mesh, rip rap or logs implemented.

5.0 Rehabilitation and Biodiversity Offset Management Plan

5.1 Rehabilitation Bond

To fulfill the requirements of the Project Approval, Daracon will lodge a Rehabilitation Bond with the Department to ensure that the rehabilitation of the Ardglen Quarry is implemented in accordance with the rehabilitation / closure objectives and criteria as defined in **Section 6**. The sum of the bond will be an amount agreed by the Planning Secretary and will be determined by:

- Calculating the cost of rehabilitating all disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and
- Employing a suitably qualified, independent and experienced person to verify the calculated costs.

The calculation of the rehabilitation bond will be submitted to the Department for approval at least two months prior to the lodgement of the bond in accordance with the Development Consent.

The Rehabilitation Bond will be reviewed and, if required, an updated bond will be lodged with the Department within 3 months of the following:

- Any update or revision to the Rehabilitation and Biodiversity Offset Management Plan;
- The completion of an Independent Environmental Audit in which recommendations relating to rehabilitation have been made; or
- In response to a request by the Planning Secretary.

Schedule 3 Conditions 32A and 32B note the process whereby the Department may either release or call in the Rehabilitation Bond.

The current rehabilitation bond for the site was approved by DPE in 2016.

5.2 Biodiversity Offset Management Strategy

This Biodiversity Offset Management Strategy has been prepared to meet the requirements of both the Project Approval and EPBC Approval 2007/3442. This section of the LMP applies to the three offset properties which have been established at the Quarry, refer to **Figure 1.3**. The Offset Areas at the Quarry include:

- Offset Area A – Lot 187 DP 751028 (6.8 ha)
- Offset Area B – Lot 39 DP 751028 (12.3 ha)
- Offset Area C – Lot 49 DP 751028 (15.8 ha).

A range of measures have already been undertaken by Daracon as part of ongoing management of the offset properties with these works largely related to land management including installation of fencing and weed control works. During 2019 and 2020, offset monitoring was undertaken to inform the status of the offset properties against the preliminary performance indicators. The completion of this offset monitoring has informed additional management measures which are recommended to be undertaken at the offset properties in 2021. These are required to be implemented with the results of the Offset Monitoring reported in the Annual Review. A copy of the annual offset monitoring will also be provided directly to BCS. The following sections detail the management measures, rehabilitation works, performance indicators and monitoring program to be implemented for the Ardglen Quarry Offset properties.

5.2.1 Offset Management Measures

5.2.1.1 Fencing and Stock Exclusion

Fencing has been established around all offset areas and fencing will be maintained over the life of the development, to the satisfaction of the Planning Secretary. In addition, fencing will be inspected on a 12 monthly basis as part of the annual offset area monitoring by Daracon, or by a contractor engaged by Daracon with fencing repairs made as required. All fencing has been constructed to a standard appropriate for excluding stock assess.

Any additional fencing construction will include the following:

- 4 or 5 strand wire of 3.5 mm size
- The top and bottom strands must be plain wire (not barbed wire) with the middle three strands being barbed wire
- The bottom strand is to be not less than 20 cm above ground level
- Wooden (or steel) posts are to be installed every 4 - 5 metres and
- Fence gates shall be constructed of Galvanised Steel with self-closing locks.

Fence condition is assessed as part of the Annual Offset Monitoring programme. Inspections undertaken as a part of 2020 monitoring indicated that all external fences to the BOA were functioning adequately with no breaches observed.

5.2.1.2 Weed Management

The three offset sites require ongoing management particularly for weeds as exotic perennial and annual grasses and broadleaves have the potential to spread once stock is excluded. Consistent with the Project Approval, an effective weed control program is implemented to limit the spread and colonisation of noxious and environmental weeds at the Quarry.

Weed management will be undertaken in accordance with most recent information available on the NSW WeedWise online resource (DPI, 2018). Actual control measures will be determined based upon the area in which activities are being undertaken (i.e., herbicides will be avoided where possible near water bodies) and the size of infestation present (mechanical removal may be more appropriate for small scale infestations). Where required, herbicide types and application rates will be informed by the control specifications from the NSW WeedWise recommendations (DPI, 2018). Herbicide application will be undertaken by suitably qualified personnel (Level 3 Chemical Accreditation). The annual offset area monitoring will also consider the potential for targeted stock grazing as a weed control technique.

The weed control works will also consider:

- Minimisation of vegetation disturbance by reducing the number of tracks
- Minimisation of clearing and other disturbance of vegetation associated with civil works
- Maintenance of topsoil stockpiles to eradicate weed infestation.

The annual offset area monitoring report (refer to **Section 0**) will be used to identify the weed control program for the following 12 month period with the weed control program to be detailed in the Annual Review.

5.2.1.3 Pest Management

Pest management will be conducted as required based on results of monitoring. Experienced pest control contractors will be engaged to perform any control programs required, including baiting, trapping, shooting etc. Pest management will be undertaken across both operational and rehabilitation areas.

Monitoring of pest species populations and the effectiveness of the control program will be undertaken and reported annually as part of offset monitoring. Recommendations and the proposed control program for subsequent year will also be included in the Annual Review.

The annual offset monitoring report (refer to **Section 0**) will be used to identify any pest control requirements for the following 12 month period with the pest control program to be detailed in the Annual Review.

5.2.1.4 Bushfire Management

Bushfire prevention is required under the *Rural Fires Act 1997*. The absence of fire will lead to a build-up of fire fuel and risk of high intensity bushfire. As the owner of the land, Daracon is required to take practicable steps to prevent the occurrence of bushfires on the land and minimise the spread of bushfire.

The primary management objective in relation to fire management is to protect lives, biodiversity values and infrastructure assets from the impacts of bushfires.

Key control measures will focus on:

- Documentation of access and water supply points for suppression activities
- Inspect and monitor firefighting equipment on site
- Communication of bushfire control measures and response procedures for provision to key stakeholders, including land managers, neighbours, consultants, contractors and employees.

In addition, an annual walkover assessment of the Offset Areas include an assessment of bushfire hazards, including fuels loads, fire events or impacts of fire management.

Any fuel hazard reduction burns will be planned in consideration of the requirements of the *Protection of the Environment (Clean Air) Regulation 2010 Part 3.* These events will also be planned in accordance with the *Bush Fire Environmental Assessment Code for New South Wales* (NSW Rural Fire Service, 2006a) and the guidelines contained in the *Threatened Species Hazard Reduction Lists for the Bush Fire Environmental Assessment Code* (NSW Rural Fire Service, 2006b). Burn intervals will consider the guidelines contained within the *Threatened Species Hazard Reduction Lists* as well as the OEH recommendations in the *Guidelines for Ecologically Sustainable Fire Management* (NPWS, 2004).

The annual offset monitoring report (refer to **Section 0**) will be used to identify any fire control works for the following 12 month period with the fire control program to be detailed in the Annual Review.

5.2.2 Offset Area Rehabilitation Methods

Rehabilitation of the offset sites will create habitat linkages with the surrounding woodland and grassland remnants via strategies detailed in the following sections.

5.2.2.1 Offset Rehabilitation Strategies

Natural Regeneration

All three Offset Areas contain areas of temperate derived grassland which support few trees and shrubs and are surrounded by grassy woodlands. Fencing and stock exclusion would be expected to facilitate natural native tree and shrub recruitment over time without the need for assisted revegetation (Orogen, 2010). The degree of overstorey recruitment was reviewed in 2019 as part of the offset monitoring program and did not meet the relevant performance criteria (>10-15% canopy cover in over 50% of Natural Regeneration monitoring plots) and so assisted revegetation was triggered. The location of offset area monitoring and corresponding vegetation at the monitoring locations are included in **Section 5.2.5.**

Assisted Revegetation

Assisted overstorey revegetation commenced within the Offset Areas in 2021 and involved the planting out of tree seedlings at a nominated density of 60 trees/ha within the derived grassland areas in order to re-establish a woodland tree stratum (refer to **Figure 5.1**). This nominated planting density would be expected to result, over time, in a mature tree density of 30 - 40 trees/ha based on natural attrition rates. Daracon engaged Umwelt to conduct ecological monitoring of the Ardglen Offset Areas during Spring 2019 and 2020 which identified locations in the Offset Areas to be targeted for planting in 2021. It is noted that the March 2021 planting has been undertaken by Daracon. Further detail regarding the planting undertaken will be included in the annual offset monitoring reports.

It is noted that prior to undertaking any works in the extension Area, Daracon will revise the Biodiversity Offset Strategy described in the EA and Response to Submissions to the satisfaction of the Planning Secretary. The revised strategy will be prepared in consultation with the BCS and include additional areas where Yellow Box White Box Blakely's Red Gum Woodland EEC would be actively re-established within the identified Biodiversity Offset Areas shown in **Appendix 3**.

The planting requirements for each offset are presented in **Table 5.1** below.

Table 5.1 Planting Requirements for the Ardglen Quarry Biodiversity Offset Areas

Biodiversity Offset Area (BOA)	Planting Schedule	Planting Area (ha)	Approximate No. trees to be planted
Offset A (Lot 187 DP 751028)	March 2021 (Planted)	1.61	97
	September 2021 (Planted)	1.76	106
Offset B (Lot 39 DP 751028)	March 2021 (Planted)	1.69	101
	September 2021 (Planted)	2.38	143
	Total	**7.44**	**447**

Note: If monitoring shows evidence that natural recruitment is slowing, or has ceased, supplementary planting will be triggered in Offset Area C however current planting is focussed on Offset Area A and B (refer to **Section 5.2**).

Assisted revegetation will be undertaken to ensure the Offset Areas satisfy the Offset Area performance criteria, refer to **Table 5.2**. This assessment will be undertaken annually as part of the Offset Area monitoring. Planting to be undertaken in the Offset Areas will include species which are representative of Box Gum Woodland CEEC species, and species belonging to local Plant Community Types (PCTs) that are representative of this CEEC. It is noted that the below species list will also be used for rehabilitation planting as detailed in **Section 5.3.2.2** and **Figure 5.3.** The species list was revised following the 2019 offset monitoring program and is detailed below:

Trees

- white box (*Eucalyptus albens*)
- Blakely's red gum (*Eucalyptus blakelyi*)
- yellow box (*Eucalyptus melliodora*)
- rough-barked apple (*Angophora floribunda*)
- red stringybark (*Eucalyptus macrorhyncha*).

Small Trees/Shrubs

- box-leaf wattle (*Acacia buxifolia*)
- silver wattle (*Acacia dealbata*)
- hickory wattle (*Acacia implexa*)
- kangaroo thorn (*Acacia paradoxa*)
- western rosewood (*Alectryon oleifolius*)
- kurrajong (*Brachychiton populneus*)
- blackthorn (*Bursaria spinosa*)
- white cypress pine (*Callitris glaucophylla*)
- *Cassinia arcuata*
- *Cassinia quinquefaria*
- sticky hop-bush (*Dodonaea viscosa*)
- native cherry (*Exocarpos cupressiformis*)
- wilga (*Geijera parviflora*)
- native olive (*Notelaea microcarpa*)
- smooth darling-pea (*Swainsona galegifolia*)
- sticky daisy-bush (*Olearia elliptica*)
- peach heath (*Lissanthe strigosa*)
- urn-heath (*Melichrus urceolatus*).

Grasses/Groundcovers

- three-awn speargrass (*Aristida ramosa*)
- trailing woodruff (*Asperula conferta*)
- red grass (*Bothriochloa macra*)
- bristly cloak fern (*Cheilanthes distans*)
- plump windmill grass (*Chloris ventricosa*)
- yellow buttons (*Chrysocephalum apiculatum*)
- barbed wire grass (*Cymbopogon refractus*)
- wattle mat-rush (*Lomandra filiformis*)
- slender rice flower (*Pimelea curviflora*)
- grey tussock grass (*Poa sieberiana*)
- slender rats tail grass (*Sporobolus creber*)
- kangaroo grass (*Themeda triandra*).

The above species list is based on the species included within the NSW White Box-Yellow Box-Blakely's Red Gum Woodland final determination, species that have been recorded by the NSW Herbarium within 25 km of Ardglen and also based on expert knowledge.

Understorey Restoration

The derived grassland and grassy woodland understoreys on the three offset sites are highly degraded from clearing and heavy grazing activity which have resulted in a replacement of native perennial grasses (*Themeda australis* and *Poa sieberiana* and native forbs) with exotic perennial grasses, exotic broadleaf annuals and a few hardy native grasses. Derived grassland and grassy woodland understoreys are dominated by the exotic perennial *Paspalum dilatatum*, exotic broadleaf annuals (clovers, medics) and the grazing tolerant native red grass *Bothriochloa macra* (Orogen, 2010). During the period 2021 - 2026, understorey restoration will be undertaken via the utilisation of weed management to encourage understorey restoration. Weed management will be undertaken as required and is included in **Section 5.2.1.2**.

Offset monitoring undertaken in 2020 recommended that weed management works be undertaken in the offset areas and these works shall be undertaken in 2021. Future weed management works will be identified during future monitoring reports. The 2021 weed control works shall consist of:

- Prickly pear (*Opuntia stricta*) in Offset B and C
- St John's wort (*Hypericum perforatum*) and blackberry (*Rubus fruticosus* agg) in Offset A.

5.2.2.2 Nest Box Installation

Twenty-seven nest boxes were installed in Offset A during 2012. These boxes are to be monitored on an annual basis (content and condition) as part of the Offset Area monitoring program. Any further nest boxes or salvaged hollows installed in the Offset Areas will also require future annual monitoring as part of this program.

5.2.3 Location of Offset Area Rehabilitation Works

Offset monitoring will be utilised to determine whether assisted planting is required to be undertaken at the Quarry. The locations within the offset areas subject to assisted planting, which was completed in 2021, are shown on **Figure 5.1**.

Following the 2020 offset monitoring program completed in December 2020, it was found that Offset Area C is generally well vegetated, while Offset Area A and Offset Area B have substantial areas of Derived Native Grassland that would benefit from assisted planting. It is proposed that Offset A and Offset B are planted with native tubestock, and Offset Area C is continued to be monitored for natural recruitment for a period of 2 – 3 years. If natural recruitment does not occur, or is considered too slow, then supplementary planting will be required in Offset Area C. This will be considered as part of the annual offset monitoring.

The proposed planting schedule is shown on **Figure 5.1**. Offset Area planting commenced in March 2021 and was completed in October 2021.

umwelt

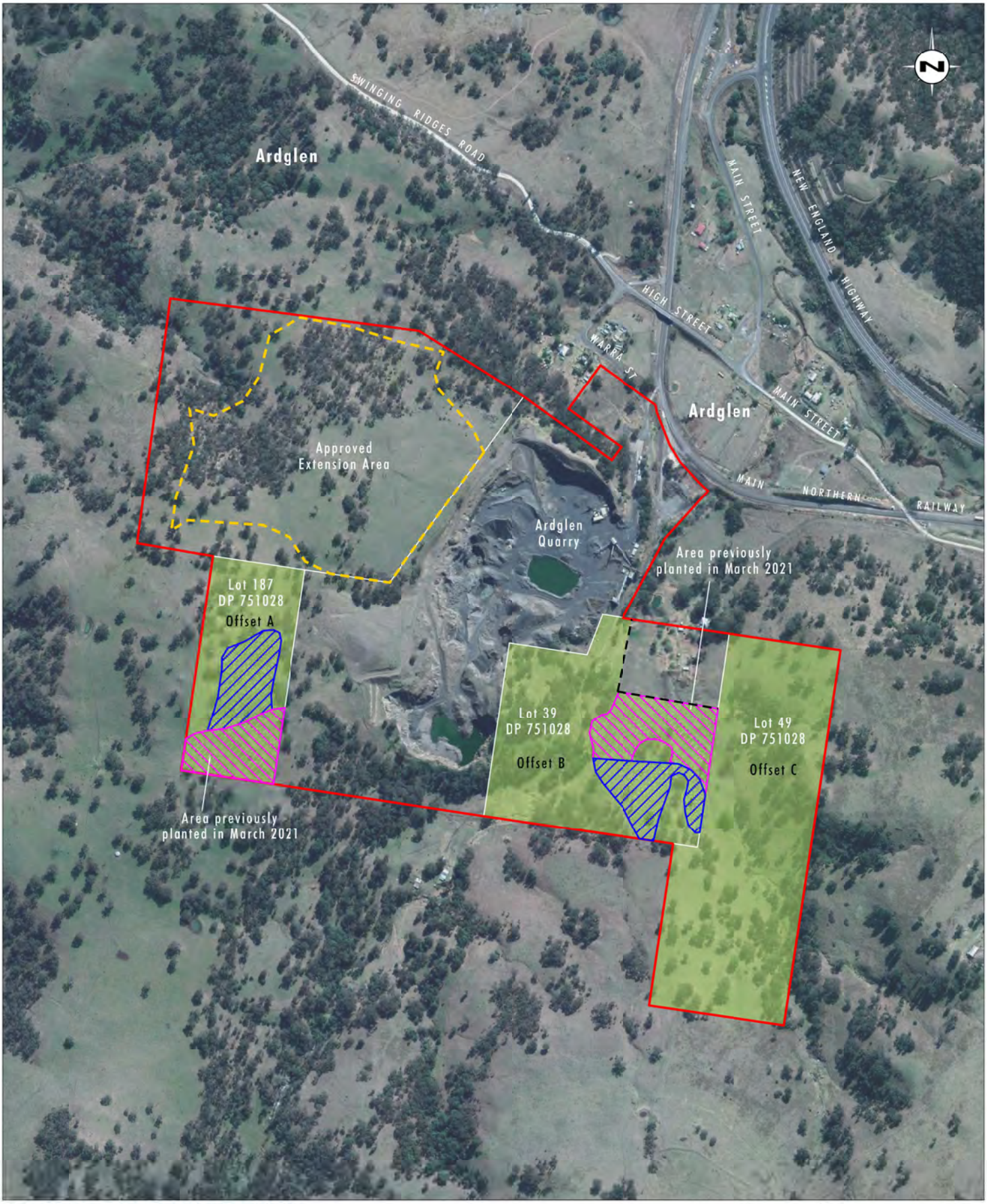


Image Source: Google Earth (Aug 2017)
Data Source: Daracon (2019), Orogen (2010)
Note: Lot boundaries digitised from existing figures. Extent of extension area lot boundary to be confirmed in field survey

0 100 250 500m
1:10 000

Legend

- Site Boundary
- Approved Extension Area
- Offset Site
- Post and Wire Fence to be Installed
- Derived Grassland Areas Planted October 2021
- Derived Grassland Areas Planted March 2021

FIGURE 5.1

Potential Offset Area Planting

File Name (A4): R03/21442_016.dgn
202101220 10.20

5.2.4 Offset Area Performance Indicators and Completion Criteria

The offset area performance indicators and completion criteria for the Ardglen Quarry Offset Areas are detailed in **Table 5.2** below. These performance and completion criteria have been refined following the completion of the offset area monitoring program. The performance of the Offset Areas is assessed against the performance and completion criteria on an annual basis with the results of the monitoring and required corrective actions reported in the Annual Review and the annual offset monitoring report.

Table 5.2 Offset Areas – Performance Criteria and Triggers for Corrective Actions

Feature	Aspect	Performance/Completion Criteria	Corrective Action
Landscape Condition	Weed infestation	Weeds do not comprise more than 15% cover in any stratum. There are no significant weed infestations.	Weed densities reviewed as part of annual Offset monitoring. If weeds make up more than 15% cover in any stratum, weed control works are to be undertaken as recommended in the annual monitoring report. Significant weed infestations are to be controlled, guided by the recommendations in the monitoring report.
	Rubbish removal	Offset Areas free of rubbish	Any areas of rubbish identified in the annual Offset monitoring program are removed within the next annual reporting period.
Natural Regeneration	**Short term** - Grazing exclusion	Fencing has been established around all offset areas and is maintained	Quarterly/Annual Monitoring identifies fence repairs are required to be undertaken. Fence repairs are to be completed.
	Medium term - Quality and cover of existing overstorey within Offset Area C	A stem count of >30 stems/ha is achieved via natural recruitment in over 75% of the Natural Regeneration monitoring plots by 2023.	If completion criteria are not met by 2023, areas to be targeted within this Offset Area for planting will be identified. Commencement of assisted planting program to be implemented at a rate of 60 stems/ha as per **Section 5.2.1.2** and **Figure 5.1**.
	Long term - Recruitment and rehabilitation of overstorey	More than 15% cover of mid-storey and overstorey species is achieved in over half of the Natural Regeneration monitoring plots by 2030.	If completion criteria are not met by 2030, supplementary planting, or alternative strategy (such as a watering protocol) is to be undertaken as recommended in the annual offset monitoring report.

Feature	Aspect	Performance/Completion Criteria	Corrective Action
Assisted Regeneration	**Short term -** Vegetation establishment	Assisted planting program as outlined in **Section 0** is commenced in 2020. Species planting list follows that which is outlined in this Section.	Assisted planting program to commence as soon as practicable. If planted species do not broadly follow the species planting list, rework is required.
Assisted Regeneration	**Medium term** - Seedling survivability	Following the implementation of the assisted planting program, more than 70% of planted seedlings have survived in each of the offset rehabilitation monitoring plots. Seedlings must have a survival rate of >70% in each planting area for at least three years post-planting before monitoring this parameter can cease.	If annual monitoring indicates that <70% of plants have survived within three years post-planting, supplementary planting is required at a rate recommended in the annual offset monitoring report.
	Long term - Overstorey restoration	A density of >30 mature stems/ha is achieved in more than 75% of the offset rehabilitation monitoring plots ten years after the initial planting year. A mature stem is a tree (overstorey species) with a diameter at breast height (dbh) greater than 10 cm.	If annual monitoring indicates that stem density is <30 mature stems/ha, supplementary planting, or alternative strategy (such as a watering protocol) is to be undertaken as recommended in the annual offset monitoring report.
	Long term - Vegetation community	Long term monitoring indicates that planted vegetation is recognisable as a vegetation community consistent with the NSW determination for White Box Yellow Box Blakely's Red Gum Woodland CEEC at the end of the Quarry life.	Actions will vary depending on the severity of divergence from recognisable vegetation community. Advice to be given in the annual offset monitoring report as required. Actions may include, but are not limited to; weed control, supplementary planting, replacement planting, or complete rework.
Habitat Material	All salvageable hollows shall be re-erected within 12 weeks from completion of staged clearing operations	Hollows are installed as required and monitored annually (condition and content) for the life of the Quarry.	If annual monitoring indicates hollows have been damaged and are no longer usable, nest boxes to be installed at a 1:1 ratio as required. If any installed salvaged hollows or nest boxes are found to be in poor condition during annual monitoring, these are to be repaired or replaced as necessary.
Long Term Security of Offset Site	Security of Offset	Offset security mechanism as detailed in **Section 5.2.6** established and implemented.	Implementation of alternate offset security mechanism if mechanism in **Section 5.2.6** cannot be resolved with DPIE.

5.2.5 Offset Monitoring

Monitoring of offset areas is to be undertaken on an annual basis. The objectives of the Annual Offset Monitoring program are to:

- Locate and describe any areas of concern within the Offset Areas
- Track the trajectory of biodiversity values and ecosystem function within the Offset Areas
- Provide recommendations to guide the improvement of biodiversity values and ecosystem function.

Monitoring will be undertaken within each Offset Area and will include a General Offset Area Monitoring component, a Rehabilitation Monitoring component once rehabilitation commences, and, once a Conservation Agreement secures the Offset Areas, a Conservation Agreement Monitoring component. The methods to complete these are outlined below. The location of the monitoring plots is shown on **Figure 1.3.**

General Offset Area Monitoring

- Walkover assessment to inspect:
    - condition of perimeter fencing around offset properties to exclude livestock
    - weed composition within Offset Areas including the need for any works to control weeds during the following 12 month period.
- Nest box monitoring of condition and content of salvaged hollows and/or nest boxes which have been placed in the Offset Areas.
- Assessment of cover and stem count of saplings (dbh <10 cm) within twelve 50 m x 20 m Natural Regeneration Monitoring plots.

Offset Rehabilitation Monitoring

Rehabilitation Monitoring Plots (20 m x 50 m) have been established at a rate of two plots per rehabilitation area and monitored annually post rehabilitation using floristic and biometric data collection methods in accordance with the BioBanking Assessment Methodology (BBAM) (OEH 2014). This is used to determine species diversity, appropriateness, and cover. In addition, the proportion of seedling survivability is to be monitored for at least three years following assisted regeneration. This will be calculated by counting the number of stems within each Rehabilitation Monitoring plot and assessing their survivability status (dead, alive, senescent etc.) over time.

The locations of the natural regeneration monitoring plots are included in **Table 5.3** and **Figure 1.3**.

Table 5.3 Natural Regeneration Monitoring Results

Offset	Plot Name	Easting	Northing
A	A1	289077	6486201
A	A2	289062	6486145
A	A3	289060	6486090
A	A4	289150	6485973
B	B1	289822	6486108
B	B2	289821	6486014
B	B3	289945	6485915
B	B4	289854	6485906
C	C1	290061	6486188
C	C2	290034	6485967
C	C3	289953	6485745
C	C4	289943	6485582

Conservation Agreement Monitoring

Following the establishment of the four permanent monitoring plots in each of the four PCTs present in the Offset Areas, the following methodology is to be completed annually once the Conservation Agreement for the offset properties is established. The locations of the offset monitoring plots are included in **Table 5.4** and **Figure 1.3**.

- Photo monitoring at each of the permanent plot markers, facing the four cardinal directions.
- Collection of floristic and biometric data, in accordance with the BBAM (OEH 2014) and described in detail in the 2019 Annual Biodiversity Offset Monitoring Report (Umwelt 2020).
- Walkover assessment of the Offset Areas, making observations of:
    - fire events or impacts of fire management
    - weeds (including compilation of list of exotic species and recording new weed infestations including location and extent)
    - pest animals (species and location must be recorded, including evidence of pest animals such as burrows, scats or disturbance)
    - visitor impact and vehicle access (including evidence of any recent usage, and the presence of any new access trails or tracks)
    - rubbish dumping
    - natural regeneration of previously disturbed areas
    - sightings of threatened species.

This monitoring (all components) is conducted annually with the results of the monitoring program utilised to determine whether any remediation/corrective actions are required to be implemented. Remediation measures required to be implemented following Offset Area monitoring will be detailed in the Annual Review. The 2019 offset monitoring included the establishment of four permanent monitoring plots for baseline Conservation Agreement Monitoring. In securing the offset properties the Conservation Agreement Monitoring is required to be undertaken annually at these locations. The offset monitoring locations are detailed in **Table 5.4** below and shown on **Figure 1.3**.

Table 5.4 Vegetation Zones and Corresponding PCT and Plot Information

Plot Name	Easting	Northing	Zone	Vegetation Zone (Orogen 2010)	PCT Name
Q01	290019	6485647	56	Blakelys Red Gum (+/- Yellow Box) Dry Sclerophyll Grassy Woodlands/Open Woodland	PCT 496 - Yellow Box - White Box - Silvertop Stringybark - Blakely's Red Gum grass shrub woodland mainly on the Liverpool Range, Brigalow Belt South Bioregion
Q02	289747	6486167	56	River Oak (*Casuarina cunninghamiana*) Dry Sclerophyll Woodland	PCT 485 - River Oak riparian grassy tall woodland of the western Hunter Valley (Brigalow Belt South Bioregion and Sydney Basin Bioregion)
Q03	289761	6485921	56	White Box (*Eucalyptus albens*) and Rough barked Apple (*Angophora floribunda*) Dry Sclerophyll Grassy Woodland	PCT 433 - White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, Brigalow Belt South Bioregion
Q04	289144	6486073	56	Derived Native Grassland	PCT 796 - Derived grassland of the NSW South Western Slopes

5.2.6 Security of Offset Areas

In consultation with the BCT, Daracon has determined that a Conservation Agreement under the *Biodiversity Conservation Act 2016* is the most appropriate mechanism for securing the offset properties. Daracon are pursuing this mechanism with the direction of the BCT. A draft Conservation Agreement (No CA0363) has been received from the BCT. Daracon will continue to liaise with BCT in regard to the finalisation of the security of the Offset Areas and will notify the DPE of the outcome.

No works will be undertaken in the Extension Area until Daracon have secured the long-term security of the Offset Areas.

5.2.7 Short, Medium and Long Term Management Measures

The short, medium and long term management measures to be employed to facilitate the implementation of the Biodiversity Offset Management Strategy are presented in **Table 5.5**. Details of each measure are provided in the previous sections. The Offset Area works will include obtaining security of the Offset Areas as a priority and the continuation of the Annual Offset Monitoring program and rehabilitation of the Offset Areas.

Table 5.5 Offset Property Actions to be implemented 2023 - 2027

Task	Details of task	Due Date
Offset Area Rehabilitation	The planting program and species list for rehabilitation of the Offset Areas is detailed in **Section 5.2.1.2**. Areas where planting will be undertaken are shown on **Figure 5.1** with planting commenced in 2021. The planting program will also be included in the Annual Review.	Rehabilitation program detailed in **Section 5.2.1.2** Planting commenced in 2021.
Offset Monitoring	Monitoring of offset properties will be undertaken annually in accordance with **Section 0**. Results of the offset monitoring program will then be used to develop actions required to be implemented to facilitate the offset properties are trending toward meeting performance indicators and completion criteria e.g., fencing has been installed, cover criteria are met etc. Results of the Offset Area monitoring, and any corrective actions, are to be reported in the Annual Review.	Monitoring undertaken annually and reported in Annual Review
Security of Offset Areas	Daracon to secure offset properties in accordance with the requirements in **Section 5.2.6**. The status of security of the Offset Areas will be reported in the Annual Review with Daracon to establish relevant regulatory sign off on a Conservation Agreement prior to undertaking any works in the Extension Area.	Prior to undertaking any works in the Extension Area.

5.3 Rehabilitation Management Strategy

As noted in **Section 1.2**, this LMP identifies the biodiversity and rehabilitation management and monitoring measures that will be implemented for the Quarry. The biodiversity management measures and associated monitoring programs relevant to the extraction areas and remnant vegetation within the Quarry are detailed in the following sections. **Section 5.0** of this document relates to the Extraction Area only with the controls and management measures relevant to Offset Areas detailed in **Section 5.0**.

5.3.1 Extraction Area Biodiversity Management Controls

During the next 5 years (2021 – 2026), the primary activities within the Quarry will involve ongoing control of weed and feral species. In the event that vegetation clearing is required to be undertaken within the existing Quarry Pit or Approved Extension Area the following controls will be implemented:

- Definition of clearing limits to mark the extent of extraction (**Section 5.3.1.5**)
- Pre-clearance surveys ahead of vegetation clearing in accordance with **Section 5.3.1.6.** Based on the outcomes of these inspections, undertake the following where required:
  - specific tree felling procedures as outlined in **Section 5.3.1.7**, in order to minimise the impacts to flora and fauna from clearing
  - collect seed and regenerative material for use in rehabilitation, as per **Section 5.3.1.4**
  - salvage of habitat features as outlined in **Section 5.3.1.3**
  - salvage soil resources for use in rehabilitation as outlined in **Section 5.3.1.2**
- Undertake feral animal and weed monitoring works as required (**Section 5.3.3**)
- Undertake rehabilitation activities (**Section 5.3.2**)
- Undertake rehabilitation monitoring activities (**Section 5.3.3**).

It is noted that controls for fencing, weed management and bushfire management within the Extraction Areas and remnant vegetation are consistent with these methods as detailed within **Section 5.2.1** and have therefore not been repeated in this section.

5.3.1.1 Management of Remnant Vegetation, Habitat and Impacts on Fauna

Due to the Quarry being currently in a state of 'care and maintenance', where no active extraction is occurring, there is no risk to remnant vegetation, habitat or impacts to fauna from operations.

A qualified ecologist currently undertakes annual inspections of the site, which includes inspection to vegetation, habitat and fauna.

This LMP will be revised to include management and mitigation measures relating to the protection of remnant vegetation, habitat and fauna as required.

5.3.1.2 Topsoil Management

The key method of rehabilitation involves the transfer of topsoil material obtained directly from cleared areas prior to their excavation. This material will be utilised in rehabilitation as:

- A seed source
- Mulch
- Erosion control
- Habitat for small fauna.

Topsoil extracted during the operation of the Quarry will be managed in accordance with the topsoil management measures outlined below in order to protect topsoil quality and enhance rehabilitation outcomes:

- The topsoil stripped will be between 100 - 400 mm in depth (dependent on the soil type present)
- Where practical, topsoil will be direct-returned to reshaped areas within the existing Quarry which are available for revegetation
- Topsoil stockpiles are to be located away from quarrying, traffic areas and watercourses and positioned within the perimeter of the closed water management system
- Topsoil stockpiles will be located within the Quarry disturbance area and not within the Quarry Offset Areas adjacent to the Quarry
- Erosion controls will be established at the base of stockpiles to prevent soil loss to the surrounding area
- Stockpiles will be generally less than 3 m high and will be set out in windrows to maximise surface exposure and biological activity
- Stockpiles to be kept longer than 3 months (i.e., approximately how long it will take to establish a stable vegetative cover) will be sown with a suitable cover crop to minimise soil erosion and invasion of weed species
- Weed growth will be monitored and controlled either by removing by hand or spraying if large areas (i.e., >40 m^2) are observed
- Prior to re-spreading, weed growth will be scalped from the top of the stockpiles to minimise the transport of weeds into rehabilitated areas.

5.3.1.3 Salvage of Habitat Features

Salvage and Re-use of Hollows

Pre-clearance surveys will be undertaken prior to clearing to identify any hollow bearing trees requiring removal in the Quarry expansion area. The total number of hollow bearing trees removed as a result of tree clearing activities will be recorded as part of the pre-clearance inspection process.

During clearing operations, hollows shall be assessed for suitability by an ecologist. Salvaged hollows will be stockpiled on for later use in rehabilitation efforts. Damaged hollows are to be repaired (where possible) or replaced with artificial nest boxes (refer **Section 5.2.2.2**). The erection of salvaged hollows would be expected to provide roosting, denning and nesting habitat for a range of fauna including threatened microbats and arboreal species. All savaged and installed hollows will be included in the annual ecological monitoring program.

Salvage of Terrestrial Habitat Structures

It is proposed to relocate logs and other suitable ground debris salvaged from the clearing operations (including unsalvageable hollows) within the offset areas. Habitat structures would be stockpiled in a nominated area. Cleared trees supporting trunk hollows that are impractical to salvage for re-erection (> 30 cm diameter hollows) would similarly be salvaged for relocation as these would provide suitable den sites for quolls.

5.3.1.4 Seed Collection and Propagation

The primary seed source utilised for quarry rehabilitation will be the direct transfer of topsoil from cleared areas during their excavation. The Quarry will implement a seed collection and propagation procedure in order to use local provenance species in rehabilitation. Seed from the site will be collected prior to or during clearing or from within adjacent buffer zones and biodiversity offset areas (in order to facilitate the protection of biodiversity values of the offset areas). Opportunities for seed collection will be assessed during pre-clearance surveys.

Locally sourced seed will be used in rehabilitation on site, where possible. When local seed cannot be sourced due to environmental conditions, seed sources which are not of local provenance will be utilised.

5.3.1.5 Vegetation Clearing Management

Site Survey and Exclusion Fencing

The clearing of vegetation on the site will be undertaken in a staged manner as the Approved Extension area will be cleared progressively as required. The extent of clearing for each stage will be delineated in the field prior to the commencement of any clearing activities. Plastic mesh fencing or star pickets and flagging tape shall be installed along the extraction area boundary for use as exclusion fencing. The fencing would function as a clearly marked ‘exclusion’ boundary for the machinery operators during clearing operations to ensure that no clearing occurs outside the individual extraction area. The extent of clearing will be communicated to contractors undertaking the works prior to the commencement of clearing activities.

5.3.1.6 Pre-Clearance Surveys

Pre-clearance surveys will be conducted no more than 2 weeks prior to clearing operations as per the tree felling procedure in **Section 5.3.1.7**. Surveys will be completed for each staged extraction area. These surveys will target threatened species known or potentially occurring in the locality and will attempt to identify critical habitat sites for these species. If critical habitat sites are located, appropriate impact mitigation measures (including capture and release in retained bushland habitats) will be undertaken according to the type of habitat feature (e.g., nest and den sites) and species concerned.

5.3.1.7 Tree Felling Procedure

A tree felling procedure will be implemented at the Quarry to minimise the potential for impacts on native fauna species (including threatened species) as a result of the clearing of hollow-bearing trees. The tree felling procedure is designed to minimise impacts to hollow-dependent fauna. The procedure includes the following:

- Comprehensive pre-clearing surveys by a suitably qualified ecologist, no more than 2 weeks prior to felling
- Removal of non-hollow-bearing trees/vegetation on the day or as close to the date of clearing as possible (in order to discourage fauna usage of the area). Removal of vegetation identified as not providing tree-hollows during pre-clearing surveys encourages hollow-dependent fauna to vacate clearing areas prior to the clearing of habitat trees, reducing the likelihood of mortality during clearing. A visual canopy inspection of all trees (including non-hollow bearing trees) to be removed on the day of clearing will be performed by a suitably experienced and licensed person so that fauna is not injured during tree felling operations. Where necessary, this can be undertaken by the Environmental Officer with instruction by a suitably experience and licensed person off site
- Detailed hollow-bearing tree felling procedures, including (but not limited to):
    - supervision of all hollow-bearing tree felling works by a suitably experienced and licensed person
    - visual canopy inspection on the day of the felling of hollow-bearing trees for fauna species and active nests
    - shaking of hollow-bearing tree (with heavy machinery) for at least 30 seconds to encourage resident fauna to abandon tree, prior to felling.
    - in the event that threatened fauna are located within hollow-bearing trees during pre-clearance surveys or tree felling, no works will be undertaken within 5 m of the identified tree until the species is captured and relocated or moves from within the clearing area of its own volition. The decision to proceed will be determined by the suitably experienced and licensed person
    - lowering of hollow-bearing trees as gently as possible with heavy machinery
    - trees would be felled away from the retained bushland on the subject site back into the extraction areas
    - inspection of all hollows in felled trees
    - capture of any displaced/injured fauna. Any injured fauna will be taken to a wildlife carer or vet
    - release of unharmed fauna into nearby secure habitats
    - felled trees to be rolled so that the number of hollows blocked against the ground are minimised
    - all felled trees to remain in place overnight to allow any unidentified fauna to escape

- Any injured fauna will be captured where possible and taken to the local wildlife carer. Once rehabilitation has been achieved (if possible), the individual will be released into habitats adjoining the capture site, and if required, into shelter sites appropriate for that species (i.e., Nestboxes) and
- salvage of suitable hollows (i.e., hollows of appropriate size and structural integrity and that can be salvaged safely) for treatment and installation within rehabilitation and revegetation areas as compensatory habitat.

All personnel conducting clearing, earth works or construction activities within the subject site must be informed of the restrictions to the clearing of vegetation outside the 'exclusion fencing'. No storage of materials, vehicle parking or other disturbance would be undertaken outside the exclusion fencing. Personnel would be supplied with an appropriate map delineating the clearing restrictions prior to the commencement of clearing activities.

5.3.2 Rehabilitation Strategy and Timing

This LMP identifies areas where rehabilitation of exposed areas which will no longer be required for operational purposes will be undertaken, refer to **Section 5.3.2.2** and **Figure 5.2** which details these locations.

The commencement of rehabilitation of quarry benches and the final landform at the Quarry is largely contingent upon the construction of the final landform. The conceptual final landform and land use for the Quarry is included on **Figure 5.2** which has been directly reproduced from **Appendix 2** of the Project Approval (Mod 2). Future revisions of this LMP will include further detail on the timing of proposed disturbance within the approved extension area as well as the opportunities for progressive rehabilitation in addition to the rehabilitation identified in **Section 5.3.2.2**.

The nature of rehabilitation undertaken at the site will also depend on the post quarry landuse for the site, which will be confirmed as part of the Detailed Quarry Closure Plan. There are however a range of areas that have been identified by Daracon on the edge of existing quarry operations which will be considered for rehabilitation during the period 2021 - 2026 (refer to **Section 5.3.2.2**).

5.3.2.1 Rehabilitation Strategy

The method for the completion of rehabilitation works undertaken on quarry benches and in areas to be rehabilitated on **Figure 5.3** will include:

- Respreading of overburden (clay soils) onto the previously quarried areas (bare rock) to a depth that allows planting of tree species to occur. The overburden would subsequently be overlain with topsoil stripped from the Quarry expansion area to a depth of approximately 100 mm
- A seed mix (refer to **Section 5.3.1.4**) would then either be hand casted onto the respread topsoil and lightly raked into the topsoil bed or, if access is difficult, hydromulched with a native seed slurry onto the topsoil. The sown seed in addition to the native soil seedbank present would be expected to establish an adequate native cover on the Quarry benches over time.

The Quarry will record the details of each rehabilitation and revegetation campaign so that they are available for later interpretation of rehabilitation monitoring results. This will allow the continual improvement of rehabilitation and revegetation standards on site. The key parameters to be recorded during each component of rehabilitation include:

- Landform design
- Drainage design
- Substrate material utilised

- Site preparation techniques such as topsoil preparation
- Revegetation methodologies such as cover crop and rate, seed viability
- Weather conditions
- Photographic records and
- Initial follow-up care and maintenance works.

5.3.2.2 Rehabilitation Locations

The rehabilitation opportunities for the period 2021 - 2026 as detailed below and shown on **Figure 5.2** are focussed on the edge of the Quarry where additional disturbance is unlikely. The potential rehabilitation areas have also focused on areas in proximity to existing offset sites or in locations where rehabilitation will assist in improving visual amenity. The rehabilitation planting schedule will be reviewed as part of the Annual Review to ensure that progressive rehabilitation is undertaken as required.

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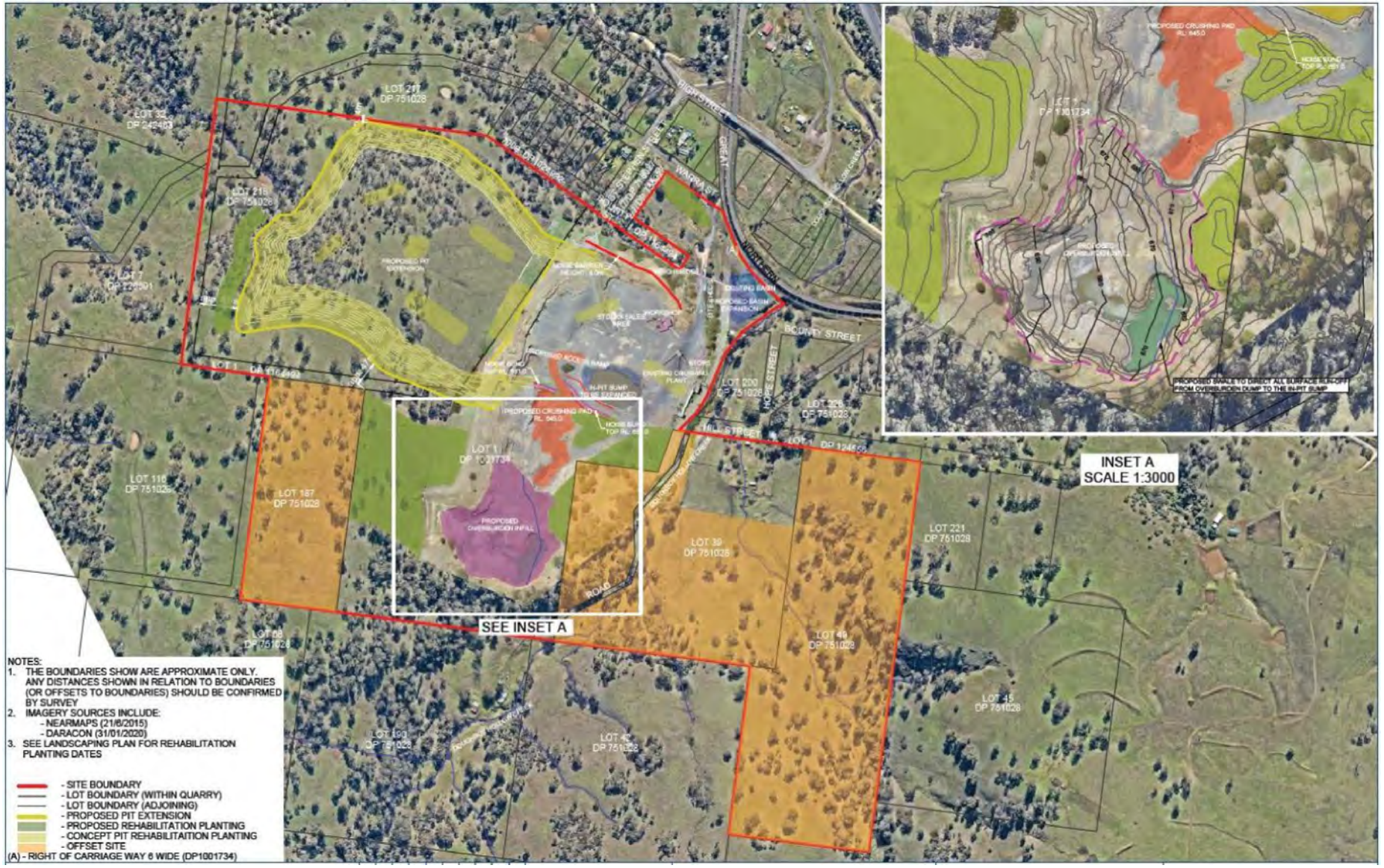
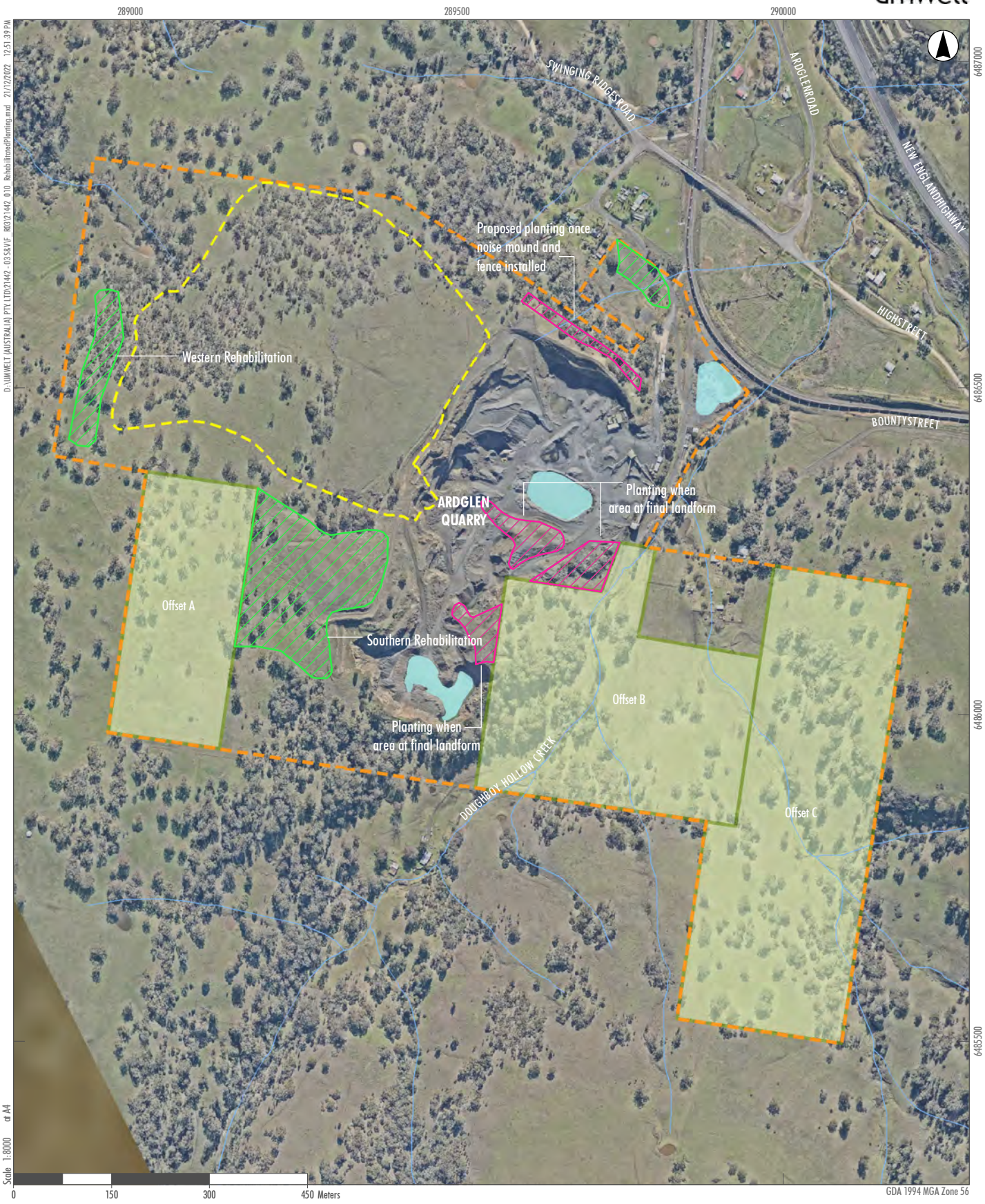


FIGURE 5.2

Conceptual Rehabilitation Plan



umwelt

Legend

- Site Boundary
- Proposed Pit Extension
- Biodiversity Offset Area Boundary
- Proposed Planting
- Ongoing Maintenance

FIGURE 5.3

Proposed Rehabilitation Planting

Image Source: Nearmap Data source: DFSI (2021)

Revegetation activities for the period 2023 – 2027 will be undertaken in the following areas, also noted on **Figure 5.3**:

- 2023 to 2027:
  - planting on noise bund once constructed to reduce visual impact, suggested seed planting mix using cover crop of sterile pasture grass and native species mix of shrubs
  - maintenance to occur, where required, on plantings on the ridgeline of western edge of Extension Area
  - maintenance to occur, where required, on plantings in the southwestern corner of the Quarry
  - planting north of the proposed noise bund, once it has been constructed
  - three areas adjacent to (north and west of) Offset B, when at final landform.

Rehabilitation works, which include revegetation and regeneration works, including establishment of canopy, sub-canopy and understorey and ground strata, where appropriate, will be undertaken primarily during the autumn and spring months. Rehabilitation works commenced at the Quarry in September 2019 with a focus on the western edge of the approved extension Area and the southwest corner of the Quarry (refer to **Figure 5.3**). At the time of writing this plan, all areas available for rehabilitation have had rehabilitation works undertaken. Further rehabilitation works will be completed progressively across the remaining areas identified in **Figure 5.3** as they become available and it is estimated that when this occurs, rehabilitation works will be undertaken over a period of approximately five years. The program for the progressive rehabilitation will be refined in subsequent revisions of the LMP.

It is noted that Daracon was approved in November 2021 by the DPE to submit this LMP in a staged approach (Refer to Appendix 3), therefore future revisions of the LMP will outline further detail regarding future rehabilitation works.

5.3.2.3 Rehabilitation Criteria/Corrective Actions for Extraction Area

Table 5.1 provides a summary of the preliminary performance and completion criteria for the rehabilitation works to be undertaken within the Extraction Area at the Quarry. The preliminary performance and completion criteria will be reviewed and revised throughout the life of the Quarry based on the results of the annual rehabilitation monitoring (refer to **Section 5.3.3**) and also during the development of the Detailed Quarry Closure Plan (refer to **Section 6.1.3**).

Table 5.6 Quarry Extraction Areas - Preliminary Rehabilitation Performance Criteria and Triggers for Corrective Actions

Aspect	Preliminary Rehabilitation Performance and Completion Criteria	Trigger	Potential Corrective Action
Decommissioning	All surface infrastructure and services not required to support the final land use will be decommissioned and removed.	Infrastructure not required as being retained in the final land use as detailed in the Quarry Closure Plan not removed from site.	Remove infrastructure and services.
Landform	Rehabilitated benches are stable and rehabilitated landform has been assessed by a qualified geotechnical engineer to validate that it is stable and does not pose a safety risk, following completion of landform works.	Geotechnical assessment determines that further works are needed.	Stabilise benches via erosion control or earthworks.
	No significant erosion is present that would constitute a safety hazard or compromise the capability of supporting the end land use.	Erosion causing a safety issue or impacting final land use. Contour banks are stable and there is no evidence of overtopping or significant scouring as a result of runoff.	Adapt erosion control strategy to stabilise landform.
	Surface layer is free of any hazardous materials.	Hazardous material present on surface. Any contamination will be appropriately remediated so that appropriate guidelines for land use are met in accordance with the requirements of the *Contaminated Land Management Act 1997* and underlying guidelines.	Remove hazardous material in accordance with legislative requirements.
Vegetation Establishment	Assisted planting program as outlined in **Figure 5.3** commenced in 2019. Species planting list follows that which is outlined in **Section 5.2.1.2**.	More than 50% of recorded species in rehabilitated areas are not on the species planting list.	Rework or supplementary planting is undertaken.
	Following the implementation of the assisted planting program, more than 70% of planted seedlings have survived in each of the Rehabilitation Monitoring plots. Seedlings must have a survival rate of >70% in each planting area for at least three years post-planting before monitoring this parameter can cease.	Annual rehabilitation monitoring indicates that less than 70% of plants have survived within three years post-planting.	Supplementary planting to be undertaken.
	A density of >30 mature stems/ha is achieved in more than 75% of the rehabilitation monitoring plots ten years after the initial planting year. A mature stem is a tree (overstorey species) with a diameter at breast height (dbh) greater than 10 cm.	Annual monitoring indicates that stem density is less than 30 mature stems/ha.	Supplementary planting, or alternative strategy (such as a watering protocol) to be undertaken.
	Long term monitoring indicates that planted vegetation is recognisable as a vegetation community consistent with the NSW determination for White Box Yellow Box Blakely's Red Gum Woodland CEEC at the end of the Quarry life.	Vegetation community does not match the description in the NSW determination for White Box Yellow Box Blakely's Red Gum Woodland CEEC.	Actions will vary depending on the severity of divergence from recognisable vegetation community. Actions may include, but are not limited to; weed control, supplementary planting, replacement planting, or complete rework.
Final Land Use	Rehabilitated land is compatible with proposed land use as demonstrated by soil assessment. Topsoil or a suitable alternative has been spread uniformly over the rehabilitation surface.	Topsoil or a suitable alternative not spread uniformly across site.	Implement remediation actions as identified by soil assessment.
Water	Runoff water quality from the site does not pose a threat to downstream water quality.	Water released from the site is in accordance with the requirements of the site Environmental Protection Licence/consistent with baseline water monitoring locations.	Review water quality results and determine activities/site locations contributing to water quality. Modify erosion control/water treatment measures as required.
Weed and Pests	There is no significant weed infestation such that weeds do not comprise a significant proportion of species in any stratum.	Evidence of significant feral animal damage to rehabilitation area.	Adapt/modify feral animal control strategy. Undertake weed and feral animal control as necessary.
Bushfire Hazard	Appropriate bushfire hazard controls have been implemented.	Increased bushfire hazards identified.	Liaise with RFS and adapt bushfire control measures.
Ongoing Public Safety	Appropriate mechanisms are established to control access and manage public safety post-closure.	Evidence of unauthorised access.	Review site security and re-secure site access points where possible. Repair site fencing.

5.3.3 Rehabilitation Monitoring

Visual inspections of rehabilitated areas within the Extraction Area will be undertaken as part of the general observational quarterly environmental site inspection. These will be complemented with annual rehabilitation monitoring that will be undertaken over the life of the quarrying operations to assess the rehabilitated landscape in more quantifiable terms.

The results of the annual rehabilitation monitoring will also be compared with the rehabilitation objectives and performance indicators and will be reported in the Annual Review (refer to **Section 7.1**). Monitoring components are outlined further below.

Quarterly Rehabilitation Inspections

These inspections will be generic in nature and be undertaken by Daracon personnel across rehabilitated areas. Daracon will assess the

- Potential of any significant erosion or stability issues
- Function and condition of drainage and sediment control structures
- Presence of any hazardous materials present on the surface layer
- General observations relating to rehabilitation including evidence of:
    - poor plant health;
    - weed abundance; and
    - feral animals.

Annual Rehabilitation Monitoring

This will comprise the following methods:

- Rehabilitation monitoring plots (20 m x 50 m) are to be established and monitored annually post rehabilitation using floristic and biometric data collection methods in accordance with the BioBanking Assessment Methodology (BBAM) (OEH 2014). A minimum of one rehabilitation plot is to be established per planting period in order to capture any differences in weather conditions or methods of planting. A minimum of four rehabilitation plots must be established across all planting areas shown in **Figure 5.3**. The plot results will be used to determine species diversity, appropriateness, and cover
- The proportion of seedling survivability is to be monitored in each of the rehabilitation monitoring plots for at least three years following rehabilitation. This will be calculated by counting the number of stems within each rehabilitation monitoring plot and assessing their survivability status (dead, alive, senescent etc.) over time
- Soil testing must occur at each of the rehabilitation monitoring sites during the first monitoring event, and every three years thereafter. Soil testing parameters must include, but are not limited to, pH, electrical conductivity (EC), nitrogen and phosphorus
- A minimum of one reference (analogue) site must be established for soil monitoring, with soil tested at the same frequency, and with the same parameters as above.

The rehabilitation monitoring program will be continued as required until it can be demonstrated that the rehabilitation of the Quarry has satisfied the performance and completion criteria. The monitoring strategy for the Extraction Areas is summarised in **Table 5.7** below.

Table 5.7 Rehabilitation Monitoring Regime

Monitoring Type	Location	Parameters Monitored	Frequency of Monitoring	Monitoring Method	Responsibility
Rehabilitation Inspections	Rehabilitated Areas	Landform stability, hazards, plant health, weed and pest presence	Quarterly	Observation	Environmental Officer or Delegate
Rehabilitation Monitoring	Rehabilitated Areas	Floristic and biometric data, cover and seedling survivability	Annually	Field Survey	Environmental Officer or Delegate
Rehabilitation Monitoring	Rehabilitated Areas	Soil testing	As required to inform planting	Soil sampling	Environmental Officer or Delegate
Rehabilitation Monitoring	Reference (Analogue) Site/s	Soil testing	As required	Soil sampling	Environmental Officer or Delegate

5.3.4 Short, Medium and Long Term Management Measures

The short, medium and long term management measures to be employed to facilitate the implementation of the strategy are presented in **Table 5.8**.

Table 5.8 Rehabilitation Actions to be implemented 2023 - 2027

Task	Details of task	Due Date
Rehabilitation of Disturbed Areas	Rehabilitation of Quarry Areas is detailed in **Section 5.3.2**. The status of progression against rehabilitation undertaken will be reported in the Annual Review.	Rehabilitation program detailed in **Section 5.3.2**
Rehabilitation Inspections	Quarterly inspections of rehabilitated areas are to be conducted in accordance with **Section 5.3.3**.	Inspections to be undertaken quarterly and results reported in the Annual Review.
Rehabilitation Monitoring	Annual monitoring of rehabilitation (including soil testing) undertaken will be undertaken in accordance with **Section 5.3.3**.	Monitoring undertaken annually once rehabilitation has been undertaken. Results of annual rehabilitation monitoring reported in Annual Review.
Salvage and placement of habitat material.	In the event that vegetation is cleared from Extraction Areas, the controls in **Section 5.3.1** will be implemented and habitat material etc will be placed into Offset Areas as required.	Details of any vegetation clearance undertaken will be reported in the Annual Review.

6.0 Conceptual Quarry Closure Plan

In accordance with Schedule 3, Condition 30 of the Project Approval the Quarry Closure Plan is required to:

l) Define the objectives and criteria for quarry closure

m) Investigate options for the future use of the site, including any final void(s)

n) Describe the measures that would be implemented to minimise/manage the ongoing environmental effects of the development

o) Describe how the performance of these measures would be monitored over time.

The staging for the development of the Conceptual and subsequently Detailed Quarry Closure Plan is discussed in further detail in **Section 1.4**.

6.1.1 Closure Objectives/Criteria

The conceptual closure objectives and criteria for the Quarry are detailed below with these criteria aligning to the Offset Area and rehabilitation criteria detailed in **Section 5.2.4** and **Section 5.3.2.3** respectively. Rehabilitation objectives for the Quarry as defined by Schedule 3, Condition 24 of the Project Approval include:

Table 6.1 Rehabilitation objectives

Feature	Objective
All areas of the site affected by the development	Safe
	Hydraulically and geotechnically stable
	Non-polluting
	Fit for the intended post quarrying operations land use(s)
	Final landform is integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land
Surface infrastructure	Decommissioned and removed, unless otherwise agreed by the Planning Secretary
Quarry benches and pit floor	Landscaped and vegetated using native tree and understorey species representative of Yellow Box White Box Blakely's Red Gum Woodland EEC
Overburden infill area	Backfilled areas integrated with surrounding natural landforms as far as is reasonable and feasible
	Emplacement areas integrated with the site water management system
	Establish grassland to support sustainable agricultural activities
	Use species found in the local area that are suitable for pasture production

These rehabilitation objectives will be refined into detailed closure criteria in future revision of this plan and as part of the development of the Detailed Quarry Closure Plan.

6.1.2 Conceptual Final Landform and Future Land Use

As identified in Project Approval, a portion of the site includes an overburden infill area in the location of the existing southern water storage area. The timing of the overburden infill program is being developed by Daracon and will be included in subsequent updates of this LMP (refer to **Section 1.4**). Permanent water storage will also be retained within Lot 1 DP 1001734 in an expanded in-pit sump east of the proposed extension area. The rehabilitation areas provide an opportunity to link rehabilitation with existing remnant vegetation to the east and west. The conceptual final landform and landuse for the site is presented in **Figure** 5.2 which has been directly reproduced from **Appendix 2** of the Project Approval (Mod 2).

Final land use options for voids are ever evolving and the final land use for the void will be considered in further detail in the Detailed Quarry Closure Plan, refer to **Section 1.4**.

6.1.3 Detailed Quarry Closure Plan

The Detailed Quarry Closure Plan will also include an assessment of a range of post closure considerations including environmental/social management, ongoing land use management and geotechnical considerations. The Detailed Quarry Closure Plan will also provide detailed closure criteria and the environmental monitoring requirements to be undertaken during and post the rehabilitation and quarry closure phase. During the development of the Detailed Quarry Closure Plan, Daracon will consult with relevant stakeholders and consider environmental, social and economic factors in determining a post quarrying land use option for the void.

7.0 Review, Revision and Reporting

7.1 Annual Review

By the end of March in each year, a summary of offset and rehabilitation monitoring results are provided to DPE in the Annual Review. The Annual Review will be prepared and submitted to the Secretary, in accordance with Schedule 5, Condition 4 of the Project Approval and will:

- Describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current financial/calendar year;
- Include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year
- Identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
- Evaluate and report on the effectiveness of the noise and air quality management systems; and compliance with the performance measures, criteria, and operating conditions of this consent;
- Identify any trends in the monitoring data over the life of the development;
- Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.

The Annual Review will be made available to the public through the Community Consultative Committee (CCC) and the Quarry web site http://www.daraconquarries.com.au.

7.2 Incident and non-compliance reporting

Environmental incidents and non-compliances will be managed in accordance with the Quarry's Pollution Incident Response Management Plan (PIRMP). Incidents that have caused or threaten to cause material harm to the environment will be reported to the Secretary, EPA and relevant stakeholders immediately once the Quarry becomes aware of the incident.

Schedule 5, Condition 3 of the Project Approval requires the Quarry to report any incident to DPE immediately. A written notification of the incident will be provided to DPE through the Department's Major Projects Website. The notification for any incident will identify the development (including the development application number and name) and set out the location and nature of the incident. Submission of the incident notification shall be the responsibility of the Quarry Manager or delegate.

Schedule 5, Condition 3A of the Project Approval requires the Quarry to report any non-compliance to DPE within seven days of becoming aware of the non-compliance. A written notification will be submitted to DPE through the Department's Major Projects Website and will contain:

- Identification of the development (including the development application number and time);
- The condition of the consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known); and
- What actions have been and/or will be undertaken to address the non-compliance.

Submission of the non-compliance notification shall be the responsibility of the Quarry Manager or delegate.

7.3 Independent Environmental Audit

The Quarry Manager will initiate scheduled audits of the project activities in accordance with the requirements of the Project Approval.

Corrective actions identified in the audit will be approved by the Quarry Manager and will be implemented in a timely manner. Follow up actions will be undertaken to verify implementation of approved corrective actions and its effectiveness in preventing recurrence. All corrective action requests whether in process or completed, will be reviewed during Project Management Reviews.

Schedule 5, Condition 5 of PA 06_0264 requires the Quarry to undertake an independent environmental audit every five years. The audit must:

- Be led by a suitably qualified, experienced, and independent auditor whose appointment has been endorsed by the Planning Secretary;
- Be conducted by a suitably qualified, experienced and independent team of experts (including any expert in field/s specified by the Planning Secretary) whose appointment has been endorsed by the Planning Secretary;
- Be carried out in consultation with the relevant agencies and the CCC;
- Assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent, water licences and mining leases for the development (including any assessment, strategy, plan or program required under these approvals);
- Review the adequacy of any approved strategy, plan or program required under the abovementioned approvals and this consent;
- Recommend appropriate measures or actions to improve the environmental performance of the development and any assessment, strategy, plan or program required under the abovementioned approvals and this consent; and
- Be conducted and reported to the satisfaction of the Planning Secretary.

Within 12 weeks of commencing this audit, or as otherwise agreed by the Planning Secretary, the Quarry will submit a copy of the audit report to the Secretary, and any other NSW agency that requests it, with a response to any recommendations contained in the audit report.

7.4 Independent Review

In the event that a landowner considers that the operations of the Quarry are exceeding the impact assessment criteria in Schedule 3 then they may ask the Planning Secretary in writing for an independent review of the impacts of the development on their land.

If the Planning Secretary is satisfied that an independent review is warranted, within 12 weeks, or as otherwise agreed by the Planning Secretary and the landowner, of the Planning Secretary's decision, an independent review will be conducted in accordance with the procedure described in Schedule 4 Condition 4 of the Project Approval.

A copy of the independent review will be provided to the Planning Secretary and the landowner.

Daracon note that Schedule 3 of the Project Approval however, does not outline specific impact assessment criteria that relates to rehabilitation or offset management.

7.5 Document Review

In accordance with Condition 15 of Schedule 2 of the Project Approval, within three months of:

(a) the submission of an incident report under condition 3 of Schedule 5;

(b) the submission of an Annual Review under condition 4 of Schedule 5;

(c) the submission of an Independent Environmental Audit under condition 5 of Schedule 5;

(d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise)

The suitability of the existing strategies, plans and programs required under this consent must be reviewed by the Applicant.

The Site Environmental Officer, or their delegate, will be responsible for undertaking the review of the LMP in accordance with the requirements listed above.

7.6 Access to Information

In accordance with Schedule 5, Condition 8 of the Project Approval, within 12 weeks of the approval of any management plan, or the completion of audits or annual reviews require under this project approval, the Quarry will ensure copies are provided to relevant agencies and the CCC, as well as uploading copies to their website.

In addition, a full summary of regularly updated monitoring results and a copy of PA 06_0264 will be available on the Quarry website.

8.0 Responsibilities

Environmental management at the Quarry will be the responsibility of all employees and contractors, with the Quarry Manager having overall responsibility for environmental management of the operation. Environmental roles and responsibilities related to rehabilitation and biodiversity management are outlined in **Table 8.1**.

Table 8.1 Roles and Responsibilities

Role	Accountabilities for this document
Daracon Divisional Manager – Construction Materials	• Provide sufficient resources for the implementation of this plan.
Daracon Quarries Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs. • Schedule rehabilitation activities as per this plan.
Environmental Officer/ Systems Manager	• Coordinate the biodiversity and rehabilitation monitoring requirements of this plan. • Review of this plan as required by the Project Approval and **Section 7.5** of the LMP. • Implementation of the long-term security requirements for the Offset Areas. • Confirm that the personnel involved in carrying out and monitoring of the activities required under this plan are suitably qualified, licensed and experienced to undertake the task. • Confirm all internal and external biodiversity and rehabilitation reporting requirements are met. • Periodically review monitoring results and progress against targets and performance indicators in accordance with the requirements of this plan. • Assess the effectiveness of the management strategies and implement corrective actions as required. • Coordinate biodiversity and rehabilitation related incident investigations and reporting as required by legislation and internal standards and guidelines.
All employees and contractors	• Comply with all requirements in this Plan. • Report all potential environmental incidents to the Quarry Manager immediately.

9.0 Definitions

The terminology utilised within this LMP is defined in **Table 9.1** below.

Table 9.1 Definitions

Term	Definition
LMP	Landscape Management Plan
CCC	Community Consultative Committee
Project Approval	PA 06_0264
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EA	Environmental Assessment
DPE	Department of Planning and Environment
Incident	Occurrence of an incident that causes (or may cause harm) to the environment.
OEH	Office of Environment and Heritage
Secretary	The Secretary of the NSW Department of Planning and Environment, including any authorised delegate or nominee.

10.0 References

Daracon Quarries, 2021, *Ardglen Quarry 2020 Annual Environmental Management Report (AEMR)*

Department Planning, Industry and Environment (DPIE), November 2021*; Letter regarding approval for staged submission of the LMP*

Environmental Resource Management, 2007. *Ardglen Quarry Environmental Assessment*.

Office of Environment and Heritage (OEH) 2014. BioBanking Assessment Methodology, September 2014.

Orogen Pty Ltd, 2010. *Landscape Management Plan Version 1: Ardglen Quarry Extension Major Project 06/0264*

NSW Department of Primary Industries (DPI), 2018. NSW WeedWise web page. http://weeds.dpi.nsw.gov.au/

NSW Rural Fire Service, 2006. *Bush Fire Environmental Assessment Code for New South Wales*

Umwelt, 2020*. 2019 Ardglen Quarry Annual Biodiversity Offset Monitoring*, prepared for Daracon Quarries, February 2020.

Umwelt, 2021. *2020 Ardglen Quarry Annual Biodiversity Offset Monitoring*, prepared for Daracon Quarries, February 2021.

APPENDIX 1

Regulatory Authority Correspondence

Theresa Telfer

Subject: FW: Ardglen Revised Biodiversity Offset Strategy

Importance: High

From: Isaac Mamott [mailto:imamott@orogen.com.au]
Sent: Tuesday, 24 August 2010 12:18 PM
To: 'Theresa Telfer'
Subject: FW: Ardglen Revised Biodiversity Offset Strategy
Importance: High

Reduce waste....print out only what is necessary.

Isaac Mamott
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From: Isaac Mamott [mailto:imamott@orogen.com.au]
Sent: Wednesday, 23 June 2010 12:25 PM
To: 'Stephen ODonoghue'
Cc: 'tfish@orogen.com.au'; 'Chris Pike'

Subject: RE: Ardglen Revised Biodiversity Offset Strategy
Importance: High

Hi Stephen

Just confirming our discussions today regarding the Ardglen Quarry project, in particular DECCW's comments on the Draft Biodiversity Offset Strategy:

1. DECCW have reviewed Orogen's response (dated 8/6/2010) to DECCW's comments on the Offset Strategy and are **in agreement** that outplanting for canopy establishment (in the event natural regeneration does not take place to a sufficient degree) would be by manual augering at planting locations rather than by direct seeding along rip lines, due to the sites' physical limitations (ie. extent of outcropping). As detailed in the Draft Landscape Management Plan, a planting density of 60 trees/ha was reached using a 30-40 tree/ha tree density prescribed in the literature for box gum woodlands (see Prober and Brown 1994; McIntyre, McIver and Heard 2002 – pg 88) and doubling that to account for natural attrition. Planting design would also be as per that outlined in the literature (see McIntyre, McIver and Heard 2002 – pg 88; Benson and Redpath 1997) for box gum woodlands;
2. DECCW acknowledge the literature cited by Orogen which demonstrates that large scale grassy woodland understorey restoration is not yet available and thus is not proposed at present on the Ardglen offset sites. We emphasise that the Draft Landscape Management Plan commits Daracon to undertaking large scale understorey restoration works should it become feasible during the life of the quarry. Our approach of canopy establishment coupled with a burning regime detailed in the LMP should assist in gradually restoring the understorey to some extent. I understand from our discussions today that DECCW is **in agreement** with this approach and commitment by Daracon.

With these two main issues resolved, we will address DECCW's comments regarding long term security and bushfire (EPA approval - clean air) and finalise the Offset Strategy and Landscape Management Plan.

regards

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From: Stephen ODonoghue [mailto:Stephen.ODonoghue@environment.nsw.gov.au]
Sent: Monday, 7 June 2010 10:32 AM
To: Isaac Mamott
Cc: Colin Phillips; Robert Taylor; Lindsay Fulloon
Subject: Ardglen Revised Biodiversity Offset Strategy

Isaac,

I have had some feedback from DECCW Environment and Conservation Programs Group in Dubbo regarding the revised offset strategy. The key comments are:

- Overall proposed offset takes a very minimalist approach ie focus is on natural regeneration and no rehab in the ground layer. Natural regeneration is only going to occur in a small radius (less than 40m) around a tree. Given there are large areas that are mostly treeless this will not achieve re-generation throughout for a long period. However, it is noted that assisted regeneration is proposed to be undertaken after 3 years depending upon success of natural recruitment.
- It is proposed ploughing and planting trees in rows if natural regeneration doesn't work. This should **not** be carried out. A better strategy would be to burn (which is part of the proposed strategy), but not when very young regenerating trees are present, and/or spray and then sow seed after good rainfall at a time of year when seed would be naturally available. It is proposed to burn in evening/ night time periods – this is likely to cause greater air impacts due to potential inversion conditions – should be timed, that is when there is good dispersion during day time period and wind away from sensitive receptors to avoid impacts on the Ardglen township and highway. Any proposed burning to manage biodiversity will also need to consider the requirements under the Protection of the Environment (Clean Air) Regulation 2002 Part 2A "Control of Burning" – an approval to burn may be required.
- The understorey should be spot sprayed to get rid of competition before the seed is spread. Trees in lines should be avoided. The Greening Australia "whole of paddock rehabilitation" approach (**without** the grazing being reimposed after tree establishment and without trees in lines) could be looked at for details (and staff approached to get advice). This includes use of shrubs that die out later but help prepare the soil for understorey plants. For the understorey the **minimum** that should be undertaken is sowing of native grass seed mixes after burning or spot spraying.
- It is proposed to use grazing for weed control. This management practice should not be undertaken. Weeds would be best eliminated by spot spraying and leaving the site alone – i.e. allowing the natural processes to operate after cessation of grazing.
- Relevant references to consult are papers by Windsor on pages 271-285 and 298-317 in *Temperate Eucalypt Woodlands in Australia: Biology, Conservation, Management and Restoration*. Eds. R. J. Hobbs and C. J. pp 271-85. Yates. Surrey Beatty and Sons, Chipping Norton.
- There are also no details on how the site will be secured for conservation. Security of the offset and incorporation of formal ongoing management/ monitoring requirements should be progressed in accordance with condition 26 of approval, noting that approval date was Dec 2008. 26. Within 3 years of this approval, the Proponent shall make suitable arrangements to provide appropriate long term security for the offset areas to the satisfaction of the Director-General.

If you have any queries please contact me, however, I may need to refer you to Dr Robert Taylor in our Dubbo office if you need to discuss technical aspects of the comments in relation to successful management techniques or otherwise for restoration of box woodland ecosystems.

Regards

Steve

Stephen O'Donoghue
Senior Regional Operations Officer
Environment Protection and Regulation Group
North West Branch - Armidale Region
Department of Environment, Climate Change and Water
ph 6773 7000

Please consider the environment before printing this e-mail.

From: Isaac Mamott [mailto:imamott@orogen.com.au]
Sent: Friday, 7 May 2010 1:23 PM
To: ODonoghue Stephen
Cc: 'Mat Radnidge'
Subject: ardglen
Importance: High

Hi Stephen

Further to my email yesterday regarding Ardglen, I just wanted to clarify a point regarding the understorey restoration in the offset sites.

The point is that to restore a grassy woodland understorey, one needs to re-establish themeda swards – whilst some field trials have been done, no large scale (> 1 ha) restoration trials have been done – even the small scale trials are still largely hit or miss.

So, until large scale themeda re-establishment is proven and is financially feasible, none will be proposed for the Ardglen sites at the present time. We will still recommend management measures such as safe winter burns and slashing to keep weeds at bay and encourage native understorey recruitment until such time as restoration is possible.

cheers

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Ann Hagerthy
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Planning Services
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PO Box 3145
Singleton NSW 2330

November 2nd 2018

To Ann,

RE: Buttai Gravel, Ardglen Quarry update to Landscape and Rehabilitation Management Plan – Nomination of suitably qualified expert

Further to our correspondence dated 12th October 2018 regarding the Ardglen Quarry Independent Environmental Audit (IEA), we now wish to propose a consultant to facilitate the updated Landscape and Rehabilitation Management Plan as detailed within the IEA action plan.

Accordingly and in accordance with Condition 27, Schedule 3 of the Project Approval 06_0264, Buttai Gravel Pty Limited (Daracon Quarries) seeks the approval of Mr Luke Bettridge (Umwelt Environmental and Social Consultants – NSW Operational Support Manager) to act as the suitably qualified person to undertake an update to the Ardglen Quarry Extension Landscape Management Plan, incorporating the:

- Doughboy Hollow Creek Rehabilitation Strategy;
- Rehabilitation and Biodiversity Offset Management Plan;
- Quarry Closure Plan;

The revisions to the Landscape Management Plan will largely focus on revisions to the progressive rehabilitation of the Quarry operations as well as the development of performance indicators and completion criteria for rehabilitation and offset works proposed to be undertaken on the site.

Luke Bettridge has prepared a number of Rehabilitation, Biodiversity and Offset Management Plans for a range of extractive industry developments in NSW, please see attached CV. Luke Bettridge will also liaise with Umwelt's NSW Ecology Manager (Alison Riley) as required in regards to the establishment of performance indicators related to the Ardglen offset properties.

Should you have any further queries, please don't hesitate to contact the undersigned.

Yours sincerely

Luke Robinson
Systems Manager – Construction Materials
Buttai Gravel Pty Ltd (Daracon Quarries)
0417 481 785

Allison Riley

NSW Ecology Manager

Allison has extensive experience in biodiversity survey, assessment and management. She has particular experience in assessing and managing impacts on threatened species and ecological communities on small scale site developments through to very large major projects. Allison's background is in terrestrial fauna survey and assessment, and through the development of strong skills in this area, she has for much of her 19 year career been a project manager of major, complex ecological impact assessments.

Allison is an accredited BioBanking, BioCertification and FBA Assessor under the NSW Threatened Species Conservation Act 1995 and an Accredited BAM Assessor in NSW under the Biodiversity Conservation Act 2016. Allison has prepared a range of EPBC Referrals and preliminary documentation assessments for major projects in NSW including for coal mines, quarries and infrastructure projects.

Qualifications: Bachelor of Science

Accreditation as a BAM Assessor under the *Biodiversity Conservation Act 2016*

Accreditation as a BioBanking Assessor under the *Threatened Species Conservation Act 1995*

Yrs Experience: 19

Expertise: Terrestrial and aquatic ecological survey and assessment

Strategic impact assessment and biodiversity offsetting assessment

EPBC Referrals

Project management and strategic direction

Relevant Project Experience

Mangoola Continued Operations Project Biodiversity Assessment and EPBC Referral | Glencore | 2015-2018 | Project Director | Mangoola NSW. Allison is the project director (in prep) for the ecological components of the Mangoola Continued Operations Project impact assessment. This involves the preparation of comprehensive Ecological Assessment in accordance with the Framework for Biodiversity Assessment (FBA) of the open cut coal mine impacts, including impact assessment and detailed impact mitigation and offsetting strategy. Key ecological impacts considered included loss of woodland habitats on the Hunter Valley floor, impacts on threatened species including prasophyllum petilum. The preparation of the Biodiversity Assessment also involved the preparation of an EPBC Act Referral to address the key impacts on Matters of National Environmental Significance (MNES) which included detailed correspondence with DoEE.

Inland Rail Project Biodiversity Assessments and EPBC Referrals | ARTC | 2016-2018 | Project Director | Parkes to Narramine and Narrabri to North Star NSW.

Allison was the project manager for the detailed Biodiversity Assessment Reports (BARs) and ecological assessment for the EPBC Referrals for two sections of rail for the Inland Rail Project assessment. These projects were complex and occurred over multiple local government areas, catchment management areas and IBRA subregions. The preparation of these reports required extensive knowledge of the ecological features of the project areas that spanned up to 280 kilometres across inland NSW.

EPBC Act Approval Compliance Audits | BHP Billiton | Project Manager | 2011-2018 | Kooragang Island NSW. Allison was part of an audit team which undertook a comprehensive environmental compliance audit against the conditions of an EPBC Controlled Activity Approval for a Waste Emplacement Facility. Key issues included construction management, biodiversity offsets, and threatened species management, particularly the green and golden bell frog.

Bli Bli Quarry Project EPBC Referral | Holcim | 2014 | Project Director | Bli Bli Qld. Allison was the project director in the preparation of an EPBC Referral for the Bli Bli Quarry Project in Qld. The preparation of this report involved detailed reviews of ecological reports and environmental documents previously approved under State legislation. Impacts on EPBC Act-listed threatened fauna species and an ecological community required specific impact assessments and advice on potential mitigation and offsetting requirements. The Project was found to be a non-Controlled Action by the Commonwealth Department of the Environment (DoE).

Green and Golden Bell Frog Monitoring for Ravensworth Offsets | Ravensworth Operations Pty Limited | Project Manager | 2009 - 2010 | Ravensworth NSW. Monitoring of the green and golden bell frog within the Ravensworth North Mine Biodiversity Offset Areas is required as part of the Offset and Green and Golden Bell Frog Management Plan (prepared by Umwelt). The aim being to protect and enhance the extent and condition of threatened species habitat values within the BOAs. The work undertaken included targeted searches for the green ad golden bell frog as well as call playback, habitat assessment and Passive Integrated Transponder tagging.

Terminal Four Project | Port Waratah Coal Services | Project Manager | 2011-2014 | Kooragang Island NSW. Allison was the project manager and co-author for the comprehensive Ecological Assessment and Biodiversity Offset Strategy for this project. The Project required substantial ecological survey effort across multiple seasons and years targeting a range of important ecological features of Kooragang Island including Coastal Saltmarsh endangered ecological community (EEC), Freshwater Wetlands EEC, green and golden bell frog (*Litoria aurea*), Australasian bittern (*Botaurus poiciloptilus*), threatened micro-bats and migratory shorebirds listed under international conventions. The Project required analysis of complex ecological interactions and threatened species issues and the development of a range of best practice impact mitigation and offsetting measures that has received positive feedback from government authorities including the NSW Office of Environment and Heritage (OEH).

Mt Owen Continued Operations Project Ecological Assessment and EPBC Referral | Glencore | 2012-2015 | Project Manager | Mt Owen NSW. Allison was the project manager and technical reviewer for the ecological components of the Mt Owen Continued Operations Project impact assessment. This involved the preparation of comprehensive Ecological Assessment of the open cut coal mine impacts, including impact assessment and detailed impact mitigation and offsetting strategy. Key ecological impacts considered included loss of woodland habitats on the Hunter Valley floor, impacts on threatened species including spotted-tailed quoll (*Dasyurus maculatus*), squirrel glider (*Petaurus norfolcensis*) and impacts on the potential local population of green and golden bell frog (*Litoria aurea*). The preparation of the Ecological Assessment also involved the preparation of an EPBC Act Referral to address the key impacts on Matters of National Environmental Significance (MNES) which included detailed correspondence with DoEE.

Tomago Offset Site Restoration Project | Port Waratah Coal Services | Project Manager | 2013 | Tomago NSW. Allison was the project manager and technical reviewer of the Ecological Assessment and relevant Biodiversity Offset Strategy for the proposed strategy to restore estuarine wetland habitats at a 238 hectare site at Tomago, NSW for the Terminal Four (T4) Project. The habitats proposed to be created at the site have been designed to meet the requirements of a number of different shorebird species including the creation of mud flats, saltmarsh and lagoons. The Project is expected to provide a gain in saltmarsh communities associated with the north arm of the Hunter River in the Lower Hunter Estuary. The report provided recommendations for the ongoing management and monitoring program that would be implemented on site following the restoration works.

Lynwood Quarry Granite Pit Project EPBC Referral | Holcim | 2014-2016 | Project Director | Marulan NSW. Allison was the project director for the ecological components of the Lynwood Quarry Granite Pit Project impact assessment and EPBC Referral. This has involved the preparation of comprehensive Ecological Assessment with the inclusion of a Biodiversity Assessment Report and a BioBanking assessment under the Framework for Biodiversity Assessment (FBA) for Major Projects. Key ecological impacts considered included loss of woodland habitats on threatened species such as micro-bats and arboreal mammals. The preparation of the Ecological Assessment involved the preparation of an EPBC Act Referral to address the key impacts on Matters of National Environmental Significance (MNES).

Expansion of Tinda Creek Sand Quarry | Ecological Assessment | Aus-10 Rhyolite Pty Ltd| Ecology Project Manager | Putty Road, NSW | 2011-2016 | Ecological Assessment and substantial biodiversity offset strategy including assessment under both state and Commonwealth environmental offset policies. The Project considered impacts and developed mitigation and management measures for the adjacent Blue Mountains World Heritage Area and National Heritage Place and Wollemi and Yengo National Parks. The Project also included application of the EPBC Act offset calculator to determine offsets for Commonwealth listed flora and fauna species, particularly Grevillea parviflora subsp. parviflora.

Preparing Lake Macquarie Wetlands for Retreat | Lake Macquarie City Council | Project Manager | 2014-2015 | Lake Macquarie NSW. Allison was the project manager for a strategic planning document for LMCC prepared to inform planning decisions by identifying the priority wetland retreat locations and the barriers to retreat within four priority wetland areas and formulating strategies to best manage the retreat of these wetland in a land-use planning and management context. The study and report identified likely retreat and buffer areas around Lake Macquarie under a 2100 and 1 metre sea level rise scenario and provided recommendations for strategic actions which present a beneficial framework for addressing constraints, reducing risks and enhancing the resilience of key wetlands to long-term, sea level rise driven changes to hydrology. Coastal saltmarsh, in particular, was identified as being highly vulnerable to loss due to sea level rise. Specific recommendations were provided on the active management and further studies for saltmarsh communities in the locality.

Luke Bettridge

Principal Environmental Consultant – NSW Operational Support Manager

Luke Bettridge is a Principal Environmental Consultant with over 14 years of experience in environmental assessment and management, particularly in the mining and quarrying sector. Luke has a Bachelor of Environmental Science with a major in Environmental Management. Luke also has accredited qualifications in regard to risk management and auditing. During the past fourteen years as an environmental consultant with Umwelt (Australia) Pty Limited, Luke has acted in site based environment and community positions at various construction and mining operations. In these roles Luke has been responsible for environmental management and rehabilitation of underground coal mining operations, open cut coal mines, quarries as well as a being an environment and community coordinator at Glencore Coal's Bulga Optimisation construction project in the Hunter Valley during 2015. During Luke's onsite roles Luke has managed both extensive land clearing and annual ecological monitoring programs for both remnant vegetation and offset properties.

Luke has an excellent understanding of the environmental risks associated with major construction projects, mining and quarrying operations and the biodiversity and rehabilitation management associated with these projects. Luke has provided advice to quarrying operations regarding rehabilitation planning and implementation, including the development of a number of Rehabilitation Management Plans in consultation with regulatory authorities. This work has included the development of rehabilitation and completion criteria for a number of mining and quarrying operations with Luke also completing numerous coal mining rehabilitation audits in NSW and Qld. Luke has also completed a number of due diligence assessments of mine closure rehabilitation risks and liabilities for ongoing operations and acquisitions.

Luke has developed conceptual closure plans for mines and quarries within New South Wales, which has included detailed scoping of closure activities and associated cost estimates. Luke has also completed Constraints and Opportunities Analysis for a number of quarries and mines to identify potential future post-mining land use constraints and options for final land use. Luke has extensive management plan experience having acted as Project Director for in excess of 15 sets of state significant development environmental management plans incorporating water management, biodiversity offset and rehabilitation management plans for a range of extractive industries, these operations are listed below.

Qualifications: Bachelor of Environmental Science
RABQSA Associate Environmental Auditor
MNCG1002A – Implement and Apply Risk Management Processes (G2)
MNCG1003 – Establish and Maintain the Risk Management System (G3)

Yrs in Industry: 14

Expertise: Closure Planning and Rehabilitation
Environmental Management Systems and Plans
Environmental Operational Support
Strategic Direction of Environmental Technical Studies
Environmental Auditing

Relevant Project Experience

Environmental Management Plans and Supplementary Approvals| Various Operations | 2004 - 2017 | Project Director. Luke has acted as the Project Manager / Project Director for a range of extractive industries. Luke has prepared management plans for state significant extractive developments for submission to Department of Planning and Environment as well as local councils. Luke has acted as the Project Director responsible for the development of Landscape / Rehabilitation and Biodiversity management plans for in excess of 15 extractive industry facilities. Luke has undertaken these works for facilities including but not limited to: Oberon Quarry, Haerses Road Quarry, Lynwood Quarry, Cooma Road Quarry, Ravensworth North Open Cut Coal Mine, West Wallsend Underground Coal Mine, Haerses Road Quarry, Lynwood Quarry, Cooma Road Quarry, Invincible Colliery, Mangoola Open Cut Coal Mine, West Wallsend Underground Mine, Cullen Valley Mine.

Corporate Client| Rehabilitation Benchmark Audits | NSW and Qld |2011. Luke was responsible for the preparation of a rehabilitation benchmark review for coal mining operations in the NSW Hunter Valley and QLD's Bowen Basin. The project involved the assessment of the progression of the sites rehabilitation towards the completion criteria which had been developed for the site, with remediation actions developed to address any rehabilitation which was not progressing in accordance with site requirements.

Mid-term Strategic Review of Progress of Former Snowy Scheme Rehabilitation | NSW National Parks and Wildlife Service | 2016. During 2016, Umwelt were engaged by the NSW Government to complete a strategic review of the progress of the rehabilitation of works which have been undertaken by the NSW Government. The review undertaken by Umwelt critically reviewed the programs budget status, the process for identifying planning and implementing the rehabilitation works, a review of the risk management framework utilised to priorities rehabilitation works, as well as an assessment of the rehabilitation performance against the program criteria agreed to at the commencement of the project. The project included field inspections to review rehabilitation performance across a range of sites which Luke attended as the projects rehabilitation specialist.

NSW Government Department| Guidelines for Mitigation of Impacts to Biodiversity | 2014. Luke was involved in the development of guidelines to be implemented in NSW to provide guidance to coal mining operations on the range of controls to be implemented to mitigate impacts to biodiversity in NSW. The guidelines prescribed a range of controls required to be implemented at mining operations to mitigate impacts on biodiversity and consider the diverse array of risks to biodiversity in NSW.

Annual Rehabilitation Walkover Inspection | OCAL – Westside Mine (Open Cut Mine) | Project Director | 2013 - 2014 | As per Glencore standards, rehabilitated areas are to be inspected annually to determine their adequacy against specific criteria. These inspections compliment ecological monitoring of rehabilitation sites and involve rapid assessment of rehabilitation areas to identify potential threats to achieving closure criteria. The Rehabilitation Walkover Inspection report identifies potential issues (e.g. weed infestations, erosion, lack of key native species) and recommends actions to be implemented in order to rectify these issues.

Cement Australia – Carwelll Creek Mines, Kandos NSW. Closure Planning and Landform Design. Project Director. In 2013 and 2014, Umwelt undertook Quarry Closure Planning and landform design for Carwell Creek Mines, located in Kandos NSW. Umwelt's involvement in the project included:

- Development of a planned closure RCE and MOP;
- Development of potential landform design options for the site, with a range of options developed in consultation with regulatory authorities and local land holders;
- Review of specialist assessments undertaken for the project including contamination, geotechnical and groundwater assessments.

Closure Cost Assessments | Completed for Various Companies for Mines and Quarries | 2013 – 2016 | Various Locations NSW. During 2013 - 2018, Luke has acted as the Project Director for in excess of 17 rehabilitation cost estimates (RCEs) for mining and quarrying operations. These RCEs have included the completion of imminent "close now" cost calculations for submission to the NSW Department of Trade and Investment – Division of Resources and Energy (DRE) as security costs for mining leases, as well as planned cost calculations for use by quarrying and mining companies.

DPE Conservation Bonds | Liddell Coal Mine, Bulga Coal Complex, Mangoola Mine, Mackas Sand, Oberon Quarry | 2016 - 2018. Luke has acted as the Project Manager / Project Director for the preparation of the DP&E Conservation Bonds required to be prepared for the above operations.

Mine Closure Workshops / Risk Assessment Facilitation | NSW. Luke has facilitated risk assessment workshops to identify constraints and opportunities related to the closure of mining operations in NSW. The risk assessments are undertaken to inform the detailed mine closure process.

Tasman Underground Coal Mine – Closure Planning, Landform Design and Rehabilitation Project | Yancoal Australia | 2014 | NSW. In 2013 and 2014, Umwelt completed a detailed multi-disciplinary project for the closure and rehabilitation of the Yancoal Australia Ltd Tasman Underground Mine, located 20 km west of Newcastle, NSW. Luke acted as the Project Manager for the project. Umwelt's involvement in the project included:

- Completion of a planned RCE for the site, including sub-contractor, demolition and earthworks fees;
- Development of potential landform design options for the site;
- Completion of an analysis of the potential landform design options and closure / rehabilitation process;
- Consultation with government agencies and the community regarding the closure process and the proposed rehabilitation strategy;
- Facilitation and completion of a Mine Closure Risk Assessment. The Mine Closure Risk Assessment identified the constraints and options for closure (including an analysis of landform design options) and the controls for the management of potential risks to closure;
- Management of Sub-consultants to undertake Contamination and Geotechnical Assessments for the site;
- Completion of a MOP for closure which was completed in accordance with the relevant DRE MOP guidelines. The MOP submitted to government agencies and approved. The MOP contained detailed information on the rehabilitation implementation and monitoring works to be undertaken;
- Completion of a series of final 'Issued for Construction' design drawings for the rehabilitation works; and
- Completion of a technical specifications document for the chosen landform design option for issue to the construction contractor.

ATTACHMENT A
Ardglen Quarry Extension (MP 06_0264) – Post Approval Landscape Management Plan

Relevant Condition	Compliance (Yes/No)	Comment	Action Required	Daracon Comment / Changes made in revised Plan
25. Prior to undertaking any works in the Extension Area, the Proponent shall revise the Biodiversity Offset Strategy described in the EA and Response to Submissions (shown conceptually in Appendix 3), to the satisfaction of the Director-General. The revised strategy must be prepared in consultation with the DECCW, and include additional areas where Yellow Box White Box Blakely's Red Gum Woodland EEC would be actively re-established within the identified biodiversity offset areas shown in Appendix 3.	Partial	Section 5.2.1.2 provides that assisted revegetation may be undertaken if required. There is no clear commitment to undertake active revegetation, and there is no commitment to use Box Gum Woodland EEC species, as required under condition 25. The Department also refers Daracon to Appendix 3 of the development consent, which indicates that 'planting of EEC trees' will occur on Lots 39 and 187. The LMP should identify the areas where natural regeneration is unlikely to be sufficient and provide a clear commitment to undertake active Box Gum Woodland revegetation in those areas (including a timeframe for doing so). The Department also understands that OEH consultation is ongoing. Please provide copies of any OEH correspondence, and an explanation as to how OEH comments have been considered/addressed in the final version of the document.	Note the comments and amend the Biodiversity Offset Strategy accordingly	The Landscape Management plan has been revised to include a clear commitment that planting of Box Gum Woodland EEC species will be undertaken within Offset Areas. The indicative species list to be used for EEC tree planting in Offset Areas is included in Section 5.2.1.2 of the LMP and will be refined following the completion of Offset Area Monitoring to be undertaken in Offset Areas in Spring 2019. The planting schedule for the Offset Areas will be updated in the revised LMP to be submitted to the Department of Planning, Industry and Environment (DPIE) in April 2020. Planting of EEC Trees in Offset Areas will commence at Ardglen Quarry in 2020. The draft LMP was submitted to OEH however there has not been a response from OEH at this stage. Daracon will continue to follow up with OEH to obtain comment on the draft LMP and will advise DPIE when comments are received.
26. Within 3 years of this approval, the Proponent shall make suitable arrangements to provide appropriate long term security for the offset areas to the satisfaction of the Director-General.	No	The Department understands that Daracon is consulting with the Biodiversity Conservation Trust (BCT) regarding the long-term security of the offset areas. However, there is no clear timeframe provided.	Include a commitment in the LMP to provide a more detailed Biodiversity Offset Strategy following further consultation with the BCT, and by no later than **31 December 2019**	Section 5.6 of the Landscape Management Plan has been updated to include a commitment to provide a revised biodiversity offset strategy to DPIE by 31 December 2019.
27. The Proponent shall prepare and implement a detailed Landscape Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared by suitably qualified expert/s whose appointment/s have been approved by the Director-General; (b) submitted to the Director-General for approval prior to undertaking any works in the Extension Area; and (c) include a: • Doughboy Hollow Creek Rehabilitation Strategy; • Rehabilitation and Biodiversity Offset Management Plan; and • Quarry Closure Plan. *Note: The Department accepts that the initial Landscape Management Plan may not include the detailed Quarry Closure Plan. However, if this occurs, the Proponent will be required to seek approval from the Director-General for an alternative timetable for the completion and approval of the Quarry Closure Plan.*	Partial	Please provide details of the author(s) relevant qualifications and experience.	Note the comments and amend the plan accordingly	Daracon sought approval for Luke Bettridge (Umwelt Operational Support Manager NSW) to be approved by DPIE as the suitably qualified expert to prepare the plan. DPIE advised on 2 November 2018 that DPIE does not typically approve consultants for the purpose of updating management plans. A copy of the correspondence from DPIE and the Daracon seeking approval of the suitably qualified consultant is attached.
28. The Doughboy Hollow Creek and Rehabilitation Strategy must: (a) be prepared in consultation with the I&I NSW and NOW; (b) describe the measures that would be implemented to: • remove the weir from Doughboy Hollow Creek; • rehabilitate the creek; and • rehabilitate and/or re-establish riparian vegetation.	Yes	See Section 4 LMP only commits to review and update the plan by 31 December 2020, or prior to any works in the Extension Area. However, this is consistent with the modified conditions of consent.	N/A	No changes required to the Plan to address this requirement.

Relevant Condition	Compliance (Yes/No)	Comment	Action Required	Daracon Comment / Changes made in revised Plan
29. The Rehabilitation and Biodiversity Offset Management Plan must: (a) be prepared by suitably qualified expert/s whose appointment/s have been approved by the Director-General;	Partial	(a) Please provide details of the author(s) relevant qualifications and experience	Note the comments and amend the plan accordingly	Daracon sought approval for Luke Bettridge (Umwelt Operational Support Manager NSW) to be approved by DPIE as the suitably qualified expert to prepare the plan. DPIE advised on 2 November 2018 that DPIE does not typically approve consultants for the purpose of updating management plans. A copy of the correspondence from DPIE and the Daracon seeking approval of the suitably qualified consultant is attached.
(b) describe in general the short, medium, and long term measures that would be implemented to: • rehabilitate the site; • implement the Biodiversity Offset Strategy and • Doughboy Hollow Creek Rehabilitation Strategy; • manage the remnant vegetation and habitat on the site;	Partial	(b) Further details are required regarding the medium and long-term rehabilitation of the site. Few details have been provided in relation to the final landform, particularly within the southern portion of the original quarry pit. The Department notes that this area was omitted from the Conceptual Rehabilitation Plan in Appendix 2, on the basis that this area would be rehabilitated under a separate Council consent. However, as the Council consent has now been surrendered, the LMP will need to address this area.	Note the comments and amend the plan accordingly	The final landform for the site is included in **Section 7.1.2** of the LMP. The conceptual final landform and land use is presented as per Appendix 2 of the Project Approval. As this item is currently being discussed between Daracon and DPIE as part of the Environmental Assessment process for the Ardglen Quarry MOD 2 assessment, information retained within the LMP is consistent with the Project Approval with this LMP to be amended to reflect the outcomes of Daracon's consultation with DPIE in regards to the final landform as a result of the MOD 2 consultation.
(c) include a detailed description of what measures would be implemented over the next 3 years to implement the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy;	Partial	(c) Further details required with respect to the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation, when available. See comments regarding condition 26 and 28 above.	Note the comments and amend the plan accordingly	Section 5.7 of the LMP includes information regarding the short, medium and long terms measures to be implemented for the Offset Area. Measures included in Table 5.3 of the LMP are related to offset monitoring, rehabilitation of the offset areas and the security of the offset property. Key actions to be undertaken include: • Offset Area Monitoring – to be undertaken Spring 2019 to review existing coverage and vegetation within Offset Areas and to confirm species to be used in Offset Area Planting species list and the schedule for planting. • Offset Area Planting – the planting schedule for the Offset Areas will be updated in the revised LMP (see below). Planting of EEC trees in Offset Areas will commence in 2020. • Update to LMP – The LMP will be updated in April 2020 to include a specific schedule for Offset Area planting and the refined EEC species list to be utilised for the planting. • Security of Offset Areas – Daracon to update DPIE by 31 December 2019 regrading the implementation of the Offset area security.
(d) include a detailed description of what measures would be implemented over the next 5 years to rehabilitate the site, including the procedures to be implemented for: • progressively rehabilitating areas disturbed by quarrying; • implementing revegetation and regeneration within the disturbance areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata; • managing the remnant vegetation and habitat on site; • managing impacts on fauna; • reducing the visual impacts of the project; • landscaping the site to minimise visual impacts; • protecting areas outside the disturbance areas; • conserving and reusing topsoil; • collecting and propagating seeds for rehabilitation works; • salvaging and reusing material from the site for habitat enhancement; • controlling weeds and feral pests; • controlling access; and	Partial	(d) Generally satisfied – see Section 6. However, the Department has concerns regarding the adequacy of progressive rehabilitation. In particular: • The LMP only provides a clear commitment to undertaken 'rehabilitation planting' adjacent to the Extension Area in September 2019. As the Department understands that this area is undisturbed, it is unclear how this constitutes 'rehabilitation' (notwithstanding the recommendations of the IEA). • The LMP identifies a 'Conceptual Planting Area' for 2020, however, no clear commitments are provided. The LMP indicates that this planting will be confirmed in the Annual Review – this is not sufficient. • Section 6.2 indicates that planting will be undertaken on the proposed noise bund, once constructed. The Department notes that this bund forms part of Modification 2, which has not been determined. • No details are provided regarding the proposed species.	Note the comments and amend the plan accordingly	Section 6.2.2 and Figure 6.2 of the of the LMP has been revised to include clear commitment for timing in regard to the completion of rehabilitation planting. The timing for the planting of the noise bund has been clarified within the text of the LMP. The proposed species for the rehabilitation planting on site are consistent with the species to be used for the Offset Area assisted planting program and are included in **Section 5.2.1.2** of the LMP.

Relevant Condition	Compliance (Yes/No)	Comment	Action Required	Daracon Comment / Changes made in revised Plan
(e) detailed performance and completion criteria for the rehabilitation of the site and implementation of the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy;	Partial	(e) Detailed criteria for Doughboy Hollow Creek Rehabilitation Strategy not provided – will need to be included in subsequent updates to the LMP. The preliminary rehabilitation performance criteria in Table 6.1 require further refinement. For example, what is 'an adequate native cover on quarry benches' or 'poor quality runoff'? Please provide clear, quantifiable targets, particularly with respect to vegetation cover, weed control, water quality, slope of quarry benches etc and avoid using vague language such as 'appropriate' or 'adequate'.	Note the comments and amend the plan accordingly	It is noted that detailed criteria will be required for Doughboy Creek in subsequent updates to the Plan. The rehabilitation performance criteria in Table 6.1 of the LMP has been refined to include rehabilitation performance criteria to reflect quantifiable targets. It is noted that the detailed rehabilitation criteria will be refined in subsequent revision of the LMP as further data becomes available and the detailed rehabilitation performance criteria will be included in the Quarry Closure Plan. Rehabilitation of selected disturbed areas will commence in 2019 however rehabilitation of quarry benches can not be undertaken until all product quarry material has been removed from the quarry.
(f) a detailed description of how the performance of the rehabilitation of the site and implementation of the Biodiversity Offset Strategy and Doughboy Hollow Creek Rehabilitation Strategy would be monitored over time to achieve the relevant objectives and completion criteria;	Yes	(f) Satisfied – Section 6.3	No further action required.	No changes to LMP
(g) a description of the potential risks to successful revegetation and/or rehabilitation in the offset areas and project area, and a description of the contingency measures that would be implemented to mitigate these risks; and	Yes	(g) Satisfied – Section 6.2.3	No further action required.	No changes to LMP
(h) details of who is responsible for monitoring, reviewing and implementing the plan.	Yes	(h) Satisfied – Section 9 and 10.		No changes to LMP
30. The Quarry Closure Plan must: (a) define the objectives and criteria for quarry closure; (b) investigate options for the future use of the site, including any final void(s); (c) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development; and (d) describe how the performance of these measures would be monitored over time.	Yes	Satisfied – more detailed plan to be provided closer to quarry closure.	No further action required.	No changes to LMP

Planning, Industry & Environment

Attachment A

BCD review of Ardglen Quarry LMP

1. Doughboy Hollow Creek Rehabilitation Strategy

Approval Condition 28 b) states that the rehabilitation strategy describe the measures that would be implemented to:

- remove the weir from Doughboy Hollow Creek;
- rehabilitate the creek; and
- rehabilitate and/or re-establish riparian vegetation.

BCD notes that the strategy does not fulfil the first dot point although it indicates that a review of its removal will be carried out. This review is scheduled to be completed by 31 December 2020.

It is further noted that the proponent has assumed that the Project Approval condition relating to the rehabilitation of Doughboy Hollow Creek applies only to the section of the creek contained within Lot 39. Rehabilitation is not proposed for those upstream and downstream sections of the creek that fall outside the three offset areas.

Confirmation is required from the Planning and Assessment Group (PAG) of the Department of Planning, Industry and Environment as to the intent of the approval conditions. BCD suggests that the creek rehabilitation is to mitigate impacts of the quarry and therefore should apply to the entire length of creek-line within the project site.

Recommendations

1.1 A strategy for the removal of the weir be developed and incorporated into the Doughboy Hollow Creek Rehabilitation Strategy.

1.2 Confirmation is obtained from PAG as to the intention of the approval conditions relating to the rehabilitation of Doughboy Hollow Creek.

2. Targets should be clear and quantifiable

The targets outlined in the Biodiversity Offset Management Strategy are very general in nature. Short, medium- and long-term objectives and targets should be described for each of the broad management measures. In the case of long-term targets, the strategy should include some interim targets that can be reviewed and amended as required.

Successful management plans include tailored, quantitative performance measures and targets, completion criteria monitoring and trigger points for corrective action which adhere to the SMART principles (specific, measurable, achievable, realistic, timely). Management targets are required for weed, feral animal and erosion control as well as habitat restoration. These targets should adhere to the SMART principles and must be measurable and expressed in a manner that assists in the evaluation of progress toward the strategic goals that define the completion criteria.

Examples of these could be:

Weed Management

<u>Objective 1</u>: Noxious and environmental weeds are identified and mapped.

Year 1: Undertake a detailed inspection of the quarry area and offset areas and accurately map (GIS) noxious and environmental weeds.

Years 2 & 3: Undertake quarterly weed inspections, update GIS database with necessary changes.

Objective 2: A risk-based weed management plan is developed for the quarry and offset areas.

Year 1: Develop a risk-based weed management program

Years 2 & 3: Implement weed management program, undertake quarterly weed inspections and schedule and undertake necessary weed treatment.

Objective 3: Reduce presence of noxious and environmental weeds.

Year 1: Implement management actions for high risk areas identified in the detailed weed inspection. Develop specific actions e.g. Targeted spraying of (insert weed) in (insert area)

Years 2 & 3: Implement weed management program. List specific actions.

Completion and performance criteria should reflect the objectives and must be quantifiable. Examples for weed management may include the "the complete removal of all (insert noxious weed)" and that "non-native groundcover not exceed 10%".

Similar detail is required for other management actions such as animal pests, bushfire management, erosion control and rehabilitation.

Recommendations

2.1 Short, medium- and long-term objectives and targets, where appropriate, be developed for each of the broad management measures.

2.2 Quantitative performance measures and targets and trigger points for corrective action be developed.

3. Monitoring methodology is to be clear with definable triggers for management actions

Monitoring is required across the entire quarry and offset sites to determine the effectiveness of management actions.

The offset monitoring plan presented in Section 5.5 is inadequate. For example, it is stated that monitoring will include weed composition within offset areas. This will inform the need for any works to control weeds during the following 12-month period. No details, such as the timing of the monitoring or the monitoring methodologies, are provided. In addition, no triggers have been proposed that will guide the need for weed control or when additional measures may be required.

A Trigger Action Response Plan (TARP) that addresses all management actions on the site should be developed.

Recommendations

3.1 A detailed monitoring plan to track performance towards completion criteria be developed.

3.2 A TARP be developed to ensure that a timely response to unforeseen circumstances are implemented.

APPENDIX 1
Ardglen Quarry Extension (MP 06_0264) – Response to OEH (BCD) comments on Landscape Management Plan

DPIE – BCD comment 13 August 2019	Daracon Comment / Changes proposed in revised Plan to DPIE 18 September 2019	March 2020 Updates undertaken to LMP
1.1 A strategy for the removal of the weir be developed and incorporated into the Doughboy Hollow Creek Rehabilitation Strategy.	As detailed in Section 4.1.1 (Causeway Removal) of the LMP, it is proposed that the causeway remain in situ until such time as a review of its removal is completed. As noted in Section 4.3 of the LMP, during 2019 – 2020, Daracon will review the scope of works required to be undertaken within Doughboy Creek in consultation with the Natural Resource Access Regulator (NRAR) and DPIE and include a revised works program within the LMP prior to 30 December 2020. Similarly to the causeway (refer to Section 4.1.1), it is proposed that the rock weir would remain in place until such time as a review of its removal is completed. The works required to be undertaken for the rehabilitation of Doughboy Creek will be reviewed prior to 31 December 2020 or prior to undertaking any works in the Extension Area, whichever occurs first. The review of rehabilitation works required will include: • Site inspection of the Doughboy Hollow Creek by suitably qualified consultant to review status of vegetation and erosion within Doughboy Hollow Creek as an update of the baseline inspection undertaken in 2010; • Determination of works required to be undertaken, if any, in regards to the erosion within the creek; • Development of a detailed methodology for removal of causeway and weir, as well as methodology for planting/ rehabilitation of the Doughboy Hollow Creek banks; • Development of an appropriate monitoring program and associated performance and completion criteria for works required to be undertaken as part of the Doughboy Hollow Creek Rehabilitation review; • Consultation with DPIE (PAG and BCD) and the Natural Resource Access Regulator (NRAR) regarding proposed rehabilitation works, performance criteria, monitoring program, any approval requirements; • Following consultation with DPI Water and DPIE, revision and update of this LMP to include the works program and detail actions required to be undertaken during the following 5 years period; • Daracon commits to this occurring prior to the 31st December 2020;	Section 4.1.1 and Section 4.1.2 has been revised to note that works will be planned prior to commencement of works within the Extension Area as identified in the Development Consent.
1.2 Confirmation is obtained from DPIE – Planning and Assessment Group (PAG) as to the intention of the approval conditions relating to the rehabilitation of Doughboy Hollow Creek.	Daracon will liaise with DPIE during 2020 as part of the scope of works detailed in Section 4.1.1 which details planning works to be undertaken for Doughboy Hollow Creek rehabilitation. This 2019 LMP update is consistent with the 2010 LMP in that rehabilitation in Doughboy Hollow Creek has been proposed within Lot 39 and rehabilitation is not proposed for those upstream and downstream sections of the creek that fall outside the three (3) offset lots. During 2020, Daracon will liaise with DPIE to confirm the extent of rehabilitation required with the proposed rehabilitation works to be prepared in consultation with DPIE and NRAR.	Section 4.1.1 and Section 4.1.2 has been revised to note that works will be planned prior to commencement of works within the Extension Area as identified in the Development Consent.
2.1 Short, medium- and long-term objectives and targets, where appropriate, be developed for each of the broad management measures.	The August 2019 LMP includes details of the short, medium and long-term measures, refer to Section 5.7 of the LMP. The Offset Area Performance Indicators and Completion Criteria are detailed in Table 5.2 of the LMP. Key to the refinement of not only the works required to be undertaken in the Offset Areas, but also the refinement of the Offset Area Indicators and completion criteria is the completion of the Annual Offset Monitoring to be conducted in Spring 2019. As noted in the LMP, the monitoring is to be conducted annually with the results of the monitoring program utilised to refine the performance indicators and completion criteria as well as detailing whether any remediation/corrective actions are required to be implemented. The results of the 2019 monitoring will be utilised to revise the LMP with a revised LMP to be submitted by Daracon to DPIE in April 2020. The results of the monitoring will be utilised to develop an action plan for implementation at each of the Offset properties. BCD are seeking further detailed in regard to the criteria for the management of the Offset Properties, which Daracon are proposing to provide following the completion of the 2019 monitoring.	The short, medium and long terms measures for the Offset Area detailed in Section 5.7 of the LMP have been reviewed and updated to detail the revised planting program and species list. These measures have been revised based on the outcomes of the 2019 offset monitoring program. Corrective actions to be implemented for each offset area have been included in Table 5.2.
2.2 Quantitative performance measures and targets and trigger points for corrective action be developed.	Similar to item 2.1 above, the LMP details the processes to be implemented to enable the refinement of the Offset Area Preliminary Performance Criteria and triggers for corrective actions, these are already included in Table 5.2 of the LMP. Table 5.2 will be updated following the completion of the 2019 Annual Offset Area monitoring.	Table 5.2 has been updated to include a revised list of Offset Area performance indicators and completion criteria have been refined to include short, medium and long term measures that are both measurable and time-bound. These measures also include triggers and corrective actions.
3.1 A detailed monitoring plan to track performance towards completion criteria be developed.	A monitoring program for the Offset Areas is included in Section 5.5 of the LMP. The results of the 2019 monitoring will be utilised to revise the LMP with a revised LMP to be submitted by Daracon to DPIE in April 2020. Annual monitoring is to be undertaken and the scope of the monitoring is included in Section 5.5 of the LMP.	The Offset Area monitoring program has been updated, refer to Section 5.5. The monitoring program speaks directly to the performance and completion criteria, and will track the progress of biodiversity values in the offsets against these. An offset rehabilitation monitoring scope has been defined to monitor the success of offset area plantings. This expands slightly on the existing monitoring program and is based upon outcomes from the results of the 2019 monitoring.
3.2 A TARP be developed to ensure that a timely response to unforeseen circumstances are implemented.	The corrective actions proposed to be undertaken in response to monitoring events are included in Section 5.4 and Table 5.2 of the LMP. The corrective actions in Table 5.2 will be revised to align with any refinements to the performance indicators and completion criteria in the April 2020.	Refer to item 2.2 above.

Mr Luke Robinson
Systems Manager
Buttai Gravel Pty Ltd
20 Kullara Close
Beresfield, STATE, Postcode

17/06/2021

Dear Mr Robinson,

Ardglen Quarry Extension (MP06_0264)
Landscape Management Plan

I refer to your request (MP06_0264-PA-10) for the Planning Secretary's approval of suitably qualified persons to prepare the Landscape Management Plan for the Ardglen Quarry Extension (MP06_0264).

The Department has reviewed the nominations and information you have provided and is satisfied that this expert is suitably qualified and experienced. Consequently, I can advise that the Planning Secretary approves the appointment of Mr Luke Bettridge to prepare the Landscape Management Plan.

If you wish to discuss the matter further, please contact Callum Firth at callum.firth@dpie.nsw.gov.au.

Yours sincerely

Matthew Sprott
Director
Resource Assessments (Coal & Quarries)

As nominee of the Planning Secretary

28/08/2023

Record Number: 23/00113#80

Planning Number: MP06_0264-PA-30

Ardglen Quarry

The Department of Planning and Environment – Crown Lands has reviewed the proposal.

For use and access to Crown land/roads/waterways
As shown in Figure 1.2 of the Draft Landscape Management Plan (August 2023), Crown Lands notes a section of Crown road and Crown waterway known as Doughboy Hollow Creek are within the project area identified partly as "Offset B". This road may provide legal access to the development but may not provide practical access. The Department advises that these roads should not be relied upon for practical access to the project site.

The Department will need to be referenced, prior to any use or occupation of any Crown roads, waterway or land, during the assessment phase.

Authority to use, traverse, access or build infrastructure on Crown land, waterway and roads is required under the *Crown Land Management Act 2016* and/or the *Roads Act 1993*. It is recommended that the proponent contact Crown Lands as early as possible to discuss and initiate the processes required to authorise the use of and/or access to Crown land and roads.

If infrastructure needs to be built on Crown land or roads, the consent of the Minister for Water, Property and Housing must be obtained, via Crown Lands, and constructed roads may need to be transferred to Council. Further information regarding land owner's consent for Crown land and roads can be found at the following link: https://www.industry.nsw.gov.au/__data/assets/pdf_file/0003/144345/landowners-consent-application-form.pdf

There are multiple Crown roads, including Crown roads with enclosure permits, adjoining the proposed development area. Any Crown road required for access to the development/proposal, will need to be transferred to Council, or application made to close and purchase the roads. As authority to access or use Crown roads is required prior to the commencement of any works or access, and to avoid any delays for the proposal, a tenure may be required in the interim. More information regarding Crown roads and Enclosure permits can be found at the following links: https://www.industry.nsw.gov.au/lands/access/roads and https://www.industry.nsw.gov.au/lands/use/enclosure-permits

If encroachment of the Crown waterway, of which Doughboy Hollow Creek occur within the site and proposal area, is required, authority to access and/or use the Crown waterway will be required.

It is recommended that the proponent contact Crown Lands to discuss any requirements as soon as possible, to avoid any possible delays and to ascertain to what extent Crown land, roads or waterways are required for the proposal.

Biodiversity/Environmental
It is noted that there may be possible clearing of vegetation. Prior consent and authorisation will be required from Crown Lands should this be proposed on Crown land, roads or waterway. Proponent should contact Crown Lands to discuss at the earliest opportunity.

Information regarding biodiversity offsets can be found at the below link:
https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme.

If the proponent requires further information, or has any questions, please contact Vicky Lyons, A/Group Leader Property Management, Tamworth in Crown Lands, on 1300 886 235 or at tamworth.crownlands@crownland.nsw.gov.au.

Yours sincerely

Vicky Lyons
A/Group Leader Property Management, Tamworth
T 1300 886 235 | **E** tamworth.crownlands@crownland.nsw.gov.au

Luke Robinson

From: Michelle Read <michelle.read@crownland.nsw.gov.au>
Sent: Friday, 6 October 2023 2:58 PM
To: Luke Robinson
Cc: BAR Ardglen Quarry; John Cannon
Subject: RE: Daracon Ardglen quarry - Doughboy Hollow rehabilitation strategy

Hi Luke

I've just reviewed the department's response to the Post Approval advice and I'm satisfied that the current licence for the spillway is sufficient at this stage.

The response is a fairly generic one that Crown Lands uses for planning responses with a number of standard statements used if any Crown land or Crown roads are identified in the project area. They are designed to flag with the proponent that if, at any stage in the future the Crown land or roads may be impacted by the project, then consent from the department would be required. It is really just a prompt for the proponent to be aware of that requirement.

In this case, it was identified that the waterway and a number of Crown roads are within the area shown as Offset Area B, so these standard responses were included – however, it is noted that there is no mention of proposed impacts on the Crown roads in the strategy, so there is no requirement for any additional approvals.

I hope this makes sense – please let me know if any further information is required.

Kind regards

Michelle Read
Group Leader Property Management

Crown Lands | Department of Planning and Environment
T 02 6763 3013 | **E** michelle.read@crownland.nsw.gov.au
Level 2, 155-157 Marius Street, Tamworth NSW 2340

NSW GOVERNMENT

The Department of Planning and Environment acknowledges that it stands on Aboriginal land.
We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically

---

From: Luke Robinson <Luke.Robinson@daracon.com.au>
Sent: Wednesday, 4 October 2023 3:36 PM
To: Michelle Read <michelle.read@crownland.nsw.gov.au>
Cc: BAR Ardglen Quarry <BAR@daracon.com.au>; John Cannon <John.Cannon@daracon.com.au>
Subject: Daracon Ardglen quarry - Doughboy Hollow rehabilitation strategy

Good afternoon Michelle,

Following our site meeting yesterday at Ardglen quarry with DPE to discuss the Doughboy Hollow rehabilitation strategy, we have a few queries regarding the Crown Lands response received (copy attached).

Throughout the attached Crown Land response, it refers to various 'authorisations' and 'approvals' required to undertake the tasks associated with the proposed Doughboy Hollow rehabilitation strategy.

As you're aware, we've already obtained a 'Crown Lands licence' to construct the permanent spillway associated with the tertiary water quality basin (copy also attached), so we're wondering what, if any other formal approvals or authorisations are required?

I'm happy to discuss this via a Teams meeting if you think that's suitable? Please let me know.

Regards Luke

Luke Robinson | Systems Manager - Construction Materials
20 Kullara Close | PO Box 401 Beresfield NSW 2322
p: 02 4974 9200 m: 0417 481 785
Luke.Robinson@daracon.com.au | www.daracon.com.au

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Department of Planning and Environment

Our ref: DOC23/783666

Luke Robinson
Buttai Gravel Pty Ltd (Ardglen Quarries)

Dear Luke

Ardglen Quarry – Land Management Plan – BCS comments

Thank you for your request via the NSW Planning Portal on 21 August 2023 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment (DPE) inviting comments on version 8 of the Land Management Plan for Ardglen Quarry (dated August 2023).

BCS has reviewed the amended management plan and we are satisfied that it addresses the requirements of Schedule 3, Conditions 24 to 30A of the project approval. We would also like to acknowledge the efforts made to address the comments we provided on a previous version of the plan on 13 August 2019.

If you have any questions about this advice, please do not hesitate to contact David Geering, Senior Conservation Planning Officer, via david.geering@environment.nsw.gov.au or (02) 6883 5335.

Yours sincerely

Renee Shepherd
A/Senior Team Leader Planning, North West
Biodiversity, Conservation and Science Directorate

6 September 2023

Department of Planning and Environment

Our ref: OUT23/14869

Luke Robinson

Daracon

Email: luke.robinson@daracon.com.au

12 September 2023

Subject: **Ardglen Quarry (MP06_0264) – Land Management Plan rev 8**

Dear Luke Robinson

I refer to your request for advice sent on 21 August 2023 to the Department of Planning and Environment (DPE) Water about the above matter.

The Department of Planning and Environment- Water has no comments on this matter.

Should you have any further queries in relation to this submission please do not hesitate to contact DPE Water Assessments at water.assessments@dpie.nsw.gov.au

Yours sincerely,

Tim Baker
Senior Projects Officer, Assessments, Knowledge Division
Department of Planning and Environment: Water

APPENDIX 2

Photographs of Doughboy Hollow Creek

Doughboy Hollow Creek Causeway

Kikuyu Dominated Section of Doughboy Hollow Creek Proposed for Rehabilitation (refer to Section 4.0)

APPENDIX 3

DPE Approval of Staged Submission

Mr Luke Robinson
Systems Manager
Buttai Gravel Pty Ltd
20 Kullara Close
Beresfield, NSW, 2322

8 November 2021

Dear Mr Robinson

Ardglen Quarry (MP 06_0264)
Staged submission of Landscape Management Plan

I refer to your request to submit the revised Landscape Management Plan on a progressive basis in accordance with condition 10 of Schedule 2 of the conditions of consent for Ardglen Quarry (MP 06_0264).

The Department has reviewed the request and is satisfied that the Landscape Management Plan can be submitted on a progressive basis. Consequently, I can advise that the Planning Secretary approves the request.

Please ensure that the revised Landscape Management Plan clearly articulates that the plan will be staged, and that further consultation will be undertaken with relevant agencies as part of any future staged revisions to the plan.

If you have any questions, please contact James McDonough on 02 9585 6313 or james.mcdonough@dpie.nsw.gov.au.

Yours sincerely,

as delegate for the Planning Secretary

APPENDIX 8 Blast Management Plan

Blast Management Plan

Project Name	Ardglen Quarry
Job No.	BAR
Client	Various
Contract No.	N/A

Document No. 1
Holder: DARACON / Client

Revision	Date	Prepared By	Reviewed By Quarry Manager	Authorised By Systems Manager	
				Name	Sign
03	17/01/22	Luke Robinson	Paul Walker	Luke Robinson	

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1. INTRODUCTION

Ardglen Quarry (the Quarry) is located on Lot 218 DP 751028, Lot 1 DP 1001734, Lot 187 DP 751028, Lot 39 DP 751028 and Lot 49 DP 751028, adjacent to the small rural community of Ardglen. Ardglen is approximately 5 kilometres (km) northwest of Murrurundi and 60 km southwest of Tamworth. The Quarry is owned and operated by Buttai Gravel Pty Ltd (trading as Daracon Quarries).

NSW Railways owned and operated the Quarry for over 100 years prior to the purchase by Daracon. In 2008 Daracon was granted approval under Part 3A of the Environmental Planning & Assessment Act 1979, to extend quarrying activities into the adjacent lot west of the existing operation, Lot 218 DP 751028. In December 2010 Daracon was granted approval for a modification to the Project Approval (Mod 1) and most recently in March 2021 approval was granted for a second modification to the Project Approval (Mod 2) (the Approval.

The Approval permits:

- the extraction and processing of up to 500,000 (tpa) of material
- transport of a combined total 500,000 tonnes/year of quarrying products from the site by road and/or rail by either:
- transport of 250,000 (tpa)of quarrying products from the site by rail
- transport of 500,000 (tpa) of quarrying products from the site by road
- Installation of blast management measures including barriers/bunds
- Modify the sediment basin, in pit sump and water treatment measures
- import of up to 80,000 tonnes/year for blending with quarried materials

The following Blast Management Plan (BMP) details the measures required to mitigate the environmental effect of blast from the above activities on our neighbours. It also details the blast monitoring programs to assess and report the levels of impact, in compliance with Schedule 3 of the Approval and provides a mechanism whereby any blast complaints can be dealt with quickly and effectively.

This document has been prepared to satisfy the requirements of Schedule 3, Condition 6 of the Approval.

2. OBJECTIVES OF BLAST MANAGEMENT PLAN

The purpose of this plan, in conjunction with the use of other environmental control documents associated with the operation of Ardglen Quarry is to ensure that Daracon Group fulfils its legal, contractual and social obligations by:

- Employing best practice environmental planning methodologies;
- Constructing and/or incorporating within the works appropriate environmental control measures;
- Providing relevant training to all personnel involved in environmental aspects (including site induction, specific environmental aspects, toolbox talks);
- Identifies sources of blast and vibration on construction sites;
- Outline site-specific feasible and reasonable work practices to guide day to day planning of quarrying operations and minimise blast impacts;
- Identifying and alerting sensitive receivers to any adverse blast and vibration impacts that may occur;

This Blast Management Plan (BMP) has been prepared to satisfy the requirements of the Approval and the Environmental Protection Licence (EPL #1115) associated with the Ardglen Quarry operations.

In addition to meeting the specific performance measures and criteria in this Approval, we also commit to implementing all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this Approval.

Additionally, we commit to applying existing management strategies plans or programs until the approval of a similar plan following the determination of the Approval.

3. LEGAL AND OTHER REQUIREMENTS

Daracon Group has an obligation under the provisions of the POEO Act to protect the environment and minimise blast impacts. Accordingly, it is a requirement of consent, as per the Approval and EPL #1115 that a program of environmental controls pertaining to the management of blast impacts be planned, documented implemented and monitored for Ardglen Quarry.

3.1 Project Approval

Table 1 below outlines the relevant blast conditions from the Approval for this BMP and where they have been addressed within the BMP.

Table 1 – Regulatory Requirements

<table>
<tr><th>Condition</th><th>Description</th><th>Section(s) Addressed</th></tr>
<tr><td colspan="3">Hours of Operation</td></tr>
<tr><td>Schedule 3 Condition 1</td><td>The Applicant must comply with the hours of operation in Table 1.

Table 1: Hours of Operation
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td rowspan="2">Topsoil/overburden removal/emplacement</td><td>Monday-Saturday</td><td>7.00am to 5.00pm</td></tr>
<tr><td>Sunday</td><td>None</td></tr>
<tr><td rowspan="2">Blasting</td><td>Monday-Friday</td><td>10:00am to 3.00pm</td></tr>
<tr><td>Saturdays, Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">In-pit activities (including drilling, extraction, and transfer of material out of the pit)</td><td>Monday-Saturday</td><td>7.00am to 5:30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td rowspan="2">Out-of-pit activities (including processing, and stockpiling)</td><td>Monday-Saturday</td><td>7.00am to 5:30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Maintenance (if inaudible at nearby residences)</td><td>Monday-Sunday</td><td>Any time</td></tr>
<tr><td rowspan="2">Truck loading and distribution</td><td>Monday-Saturday</td><td>6.30am to 5.30pm</td></tr>
<tr><td>Sundays and Public Holidays</td><td>None</td></tr>
<tr><td>Rail loading</td><td>Monday-Sunday</td><td>7:00am to 10:00pm</td></tr>
</table></td><td>Section 5 & Section 6</td></tr>
</table>

Condition	Description	Section(s) Addressed
	Note: • The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41). • The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast.	
Blasting and Vibration		
Airblast Overpressure Criteria		
Schedule 3 Condition 7	The Applicant must ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 5 at any privately-owned residence.	Section 7

Table 5: Airblast overpressure impact assessment criteria

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Condition	Description	Section(s) Addressed
Ground Vibration Impact Assessment Criteria		
Schedule 3 Condition 8	The Applicant must ensure that the ground vibration level from blasting at the development does not exceed the criteria in Table 6 at any privately-owned residence.	Section 7

Table 6: Ground vibration impact assessment criteria

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts over a period of 12 months
10	0%

Condition	Description	Section(s) Addressed
Blasting Frequency		
Schedule 3 Condition 9	The Applicant must not carry out more than 30 blasts a year, or more than 1 blast per day, without the written approval of the Planning Secretary.	Section 9
Operating Conditions		
Schedule 3 Condition 10	The Applicant must implement best blasting practice to:	Section 8
	(a) protect the safety of people, property, public infrastructure and livestock; and	

Condition	Description	Section(s) Addressed
	(b) minimise the dust and fume emissions from blasting at the development, to the satisfaction of the Planning Secretary.	
Schedule 3 Condition 11	The Applicant must not undertake blasting within 500 metres of any privately-owned land or any land not owned by the Applicant, unless suitable arrangements have been made with the landowner and any tenants to minimise the risk of flyrock-related impact to the property to the satisfaction of the Planning Secretary.	Section 9
Public Notice		
Schedule 3 Condition 12	The Applicant must:	Section 9.1
	(a) notify the landowner/occupier of any residence within 1 kilometre of the quarry pit who registers an interest in being notified about the blasting schedule at the quarry;	
	(b) operate a Blasting Hotline, or alternate system agreed to by the Planning Secretary, to enable the public to get up-to-date information on the blasting schedule at the quarry;	
	(c) keep local residents informed about this hotline (or any alternative notification protocols), to the satisfaction of the Planning Secretary.	
Property Investigations		
Schedule 3 Condition 13	If any landowner of privately-owned land within 1 kilometre of the site claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the site, following commencement of operations within the extension area, then he/she may ask the Planning Secretary in writing to investigate the claim.	Section 9.2
	If the Planning Secretary is satisfied that an independent property investigation is warranted, the Applicant must within 3 months of the Planning Secretary's determination:	
	(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to investigate the claim; and	
	(b) give the landowner a copy of the property investigation report.	
	If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damages to the satisfaction of the Planning Secretary.	Section 9.2
	If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Planning Secretary for resolution.	

Condition	Description	Section(s) Addressed
Blast Monitoring Program		
Schedule 3 Condition 14	The Applicant must prepare a Blast Monitoring Program for the development in consultation with the EPA and to the satisfaction of the Planning Secretary. This program must:	Section 8
	(a) include a protocol for demonstrating compliance with the blasting criteria in Table 6 of this Schedule; and	
	(b) be submitted to the Planning Secretary for approval within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).	
Meteorological Monitoring		
Schedule 3 Condition 18	The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that: (a) complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (DEC, 2007); and	Section 9.2
	(b) is capable of measuring meteorological conditions in accordance with the *NSW Industrial Noise Policy* (EPA, 2000), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	
Notification of Landowners		
Schedule 4 Condition1	If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant must notify the Planning Secretary and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) accordingly, and provide monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.	Section 8
Notification of Exceedances		
Schedule 4 Condtion 1A	As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in Schedule 3 of this consent, the Applicant must provide the details of the exceedance to any affected landowners and/or tenants. For any exceedance of any air quality criterion in Schedule 3 of this consent, the Applicant must also provide to any affected land owners and tenants a copy of the fact sheet entitled “Mine Dust and You” (NSW Health, 2017).	Section 8
Environmental Monitoring		
Schedule 5 Condition 2	Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an	Section 10.2

Condition	Description	Section(s) Addressed
	environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.	
Schedule 5 Condition 2A	Noise, blast and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in Schedule 3, providing that these representative monitoring locations are set out in the respective management plan(s) and/or monitoring program(s).	Section 9
Reporting		
Schedule 5 Condtion 3	The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.	Section 8
Schedule 5 Condtion 3A	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 8
Community Consultative Committee		
Schedule 5 Condtion 7	The Applicant must operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Planning Secretary, in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019).	Section 11
Access to Information		
Schedule 5 Condtion 8	Within 3 months of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or Annual Reviews required under this consent, the Applicant must:	Section 10 and Section 11

Condition	Description	Section(s) Addressed
	(a) provide a copy of the relevant document/s to the relevant agencies and CCC; and	
	(b) put a copy of the relevant document/s on its website.	
Schedule 5 Condtion 9	During the development, the Applicant must:	Section 10
	(a) include a copy of this consent, as may be modified from time to time, on its website;	
	(b) provide a full summary of monitoring results required under this consent on its website; and	
	(c) update these results on a regular basis (at least every 6 months).	
Statement of Commitments – Blast and Vibration		
11	The proponent will implement the following measures to mitigate the impacts of blasting and vibration: • Blasting will be limited to between the hours of 10am and 4pm, Monday to Friday and residents in the vicinity of the quarry will be given adequate notification of forthcoming blasts; • Air blast overpressure from any blast will not exceed 115 dB(Lpeak) at any privately owned residence for more than 5% of all blasts over a 12 month period. It will not exceed 120 dB(Lpeak) at any time, unless specific prior agreement is reached with the affected landholder; • Peak Particle Velocity (PPV) from ground vibration will not exceed 5 mm/s at any privately owned residence for more than 5% of all blasts over a 12 month period. The maximum level will not exceed 10 mm/s at any time; • The existing blast management strategy will continue to be implemented to ensure appropriate charge masses are used to avoid excessive air blast overpressure and ground vibrations; • A blast management program will be prepared and submitted to the Director-General for approval;	Section 7 and Section 8

4. RESPONSIBILITIES

As detailed in **Table 2**, it shall be the responsibility of the Quarry Manager (QM) to ensure that the requirements of this plan are implemented.

Table 2 - Role and Responsibilities of Quarry Personnel

Role	Responsibility
Daracon Divisional Manager – Construction Materials	Provide sufficient resources for the implementation of this plan.
Daracon Quarries Manager	• Oversee the implementation of this plan. • Have working knowledge of this plan. • Coordinate the implementation of blast management measures and strategies in accordance with this plan. • Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance. • Ensure employees are competent through training and awareness programs.
Environmental Officer / Systems Manager	• Coordinate the review of this plan in accordance with the requirements of the Approval. • Coordinate the blast monitoring program described in this plan. • Evaluate and report monitoring results as required by the Consent and Environment Protection Licence (EPL). • Coordinate blast related incident investigations and reporting as required by legislation. • Initiate investigations of complaints as received from the public or government agency. • Provide primary contact for complaints and supply follow-up information to any complainant. • Prepare a report to government agencies or neighbours following incidents/ non-compliances.
All employees and contractors	• Comply with all requirements in this plan. • Report all potential environmental incidents to the Environmental Officer/Quarry Manager immediately. • Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment. • Follow any instructions provided by the Quarry Manager.

5. HOURS OF OPERATION

The hours of Ardglen Quarry operation taken from the Approval are shown in

We commit to implementing and complying with the work hours listed in Table 3.

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We commit to implementing and complying with the work hours listed in Table 3.

Table 3: Hours of Operation

Activity	Day	Time
Topsoil/overburden removal and emplacement	Monday-Saturday	7:00am – 5:00pm
	Sunday	None
Blasting	Monday-Friday	10:00am– 3:00pm
	Saturday, Sunday and public holidays	None
In-pit activities (including drilling, extraction, and transfer of material out of the pit)	Monday-Saturday	7:00am – 5:30pm
	Sunday and public holidays	None
Out-of-pit activities (including processing and stockpiling)	Monday-Saturday	7:00am – 5:30pm
	Sunday and public holidays	None
Maintenance (if inaudible at nearby residences)	Monday-Sunday	Any time
Truck loading and distribution	Monday-Saturday	6:30am – 5:30pm
	Sunday and public holidays	None
Rail loading	Monday-Sunday	7:00am – 10:00pm

6. OUT OF HOURS WORK REQUIREMENTS AND COMMITMENTS

If loading more than 2 trains outside the rail loading and distribution hours (see Table 3) in any 12 month period is required, Daracon will seek an agreement in writing with the Planning Secretary.

If the Daracon intends to undertake out of hours rail loading, Daracon will use its best endeavours to notify all local residents at least 12 hours prior to the proposed rail loading, to the satisfaction of the Planning Secretary.

If blasting operations outside the hours listed in Table 3 is required for safety reasons, Daracon will notify the EPA and the local community about the proposed blast as soon as possible.

7. BLAST IMPACT ASSESSMENT CRITERIA

The Department of Planning, Industry & Environment (DPIE) issued blast impact assessment criteria for the Ardglen Quarry's operational noise at each of the surrounding residences. The approved blast impact assessment criteria for the surrounding residences are reproduced in Table 4. These criteria are as specified in Table 5 and 6 of the of the Approval

Daracon will implement the use of this BMP to ensure that the combined blasting impact generated by the Ardglen Quarry does not exceed the blast impact assessment criteria in Table 4 at any residence on privately-owned land.

Table 4: Blast Impact Assessment Criteria for the Ardglen Quarry

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts over a period of 12 months
10	0%

Additionally, Daracon will ensure that the blast overpressure does not exceed 120 dB(Lpeak) at any time, unless specific prior agreement is reached with the affected landholder;

Section **Error! Reference source not found.** of this BMP details Daracon's out of hours work requirements and commitments for the Ardglen Quarry.

8. BLAST MONITORING PROGRAM

As required in Schedule 3, Condition 14 of the Approval, the blast monitoring program for this BMP will include the following:

- Airblast overpressure monitoring for each blast;
- Peak Particle Velocity (PPV) monitoring for each blast;
- Review and reporting all blast results;

This blast monitoring program was meant to be submitted to the Planning Secretary for approval within three months of the determination of MOD 2. However, Daracon notified DPIE on 11 June 2021 of its intention to submit this BMP before the 31 December 2021. At the time of submission of this plan Daracon is yet to receive a valid response from DPIE.

Daracon will plan, implement and monitor all blasts to ensure that best practice is achieved to:
- Protect the safety of people, property, public infrastructure and livestock; and
- Minimise the dust and fume emissions from blasting at the development, to the satisfaction of the Planning Secretary;

Daracon will implement this blast monitoring program for the Ardglen quarry as approved by the Planning Secretary.

8.1 Blast Monitoring

Blast monitoring will involve the measurement of overpressure and ground vibration. Blast monitoring will be undertaken at the two receiver locations shown in Table 5 and on Figure 1:

Table 5: Blast Impact Assessment Criteria for the Ardglen Quarry

*Location**
Receptor 2
Receptor 7

* From Figure 6-1, EA Noise Assessment (ERM, 2006).

Portable blast monitors will be used to measure blast overpressure and ground vibration at selected blasting events to ensure the impact assessment criteria are met. Instrumentation used to monitor compliance will meet the requirements of Australian Standard 2187.2 of 2006. The results of blast monitoring will be submitted to DECCW and the DoP at the end of each reporting period and be summarised and interpreted in the Annual Environmental Management Report (AEMR).

Flyrock Monitoring
No flyrock is predicted to be emitted beyond the zone of exclusion. All blasts will be closely observed. Blasting procedures will be designed to keep flyrock to a minimum and contained within the quarry. In the event of any flyrock extending beyond the quarry a thorough assessment will be carried out to try to determine the cause.

Review Process
All blasts that exceed the ground vibration or air overpressure criteria at the blast monitoring locations will be reviewed by the Drill and Blast Superintendent to identify causal factors and any potential improvements that can be made to improve blasting performance.

The Proponent is to report to the DPIE and community as detailed in Section 8.2 any blast that exceeds the levels for ground vibration or air overpressure as nominated in the Approval.

Figure 1 – Blast monitoring locations (from Figure 6-1, EA Noise Assessment (ERM, 2006))

8.2 Exceedance Protocol Non-Compliance Notification

In accordance with, Schedule 5 Condition 3A of the Approval , within seven days of becoming aware of a non-compliance with the blast criteria, Daracon will notify the DPIE of the non-compliance. The notification will be in writing to compliance@planning.nsw.gov.au. The notificiation will identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Furthermore, Daracon will notify the DPIE in writing (compliance@planning.nsw.gov.au) and any other relevant Agency immediately after it becomes aware of an incident as defined by the Approval. An incident notification shall (at a minimum) identify the development and set out the location and nature of the incident.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

8.3 Notification of Exceedances to Landowners

If blast monitoring results identify that impacts generated by the development are greater than the blast impact assessment criteria in Table 4, Daracon will:

- Notify the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) as soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of the blast impact assessment criteria.
- Provide monthly (whilst quarry operations are being carried out) monitoring results to each of the affected landowners until the blast monitoring results show that the development is complying with the blast impact assessment criteria in Error! Reference source not found..
- Notify the Planning Secretary in accordance with Schedule 4, condition 1 of the Approval.

9. OPERATIONAL CONTROLS

We commit to implementing the recommended blast mitigation measures as outline in the MOD 2EA to the satisfaction of the Planning Secretary.This includes the following proactive and reactive actions or strategies to minimise the potential for blast impacts at residential receivers.

9.1 Blast Impact Mitigation Measures

In accordance with the Approval, the following blast impact mitigation measures will be in place for the quarry to proactively manage potential blast impacts:

- Blasting will only occur Monday to Friday between the hours of 10am and 3pm;
- Daracon will notify the landowner/occupier of any residence within 1 kilometre of the quarry pit who registers an interest in being notified about the blasting schedule at the quarry;
- Daracon will operate a Blasting Hotline, or alternate system agreed to by the Planning Secretary, to enable the public to get up-to-date information on the blasting schedule at the quarry;
- Daracon will keep local residents informed about this hotline (or any alternative notification protocols), to the satisfaction of the Planning Secretary;
- Before a blast occurs, an assessment of the forecast weather conditions will be undertaken with respect to potential for blast impact enhancing conditions. If the forecast weather is likely to introduce additional blast impact, then the blast may be delayed if it is feasible and safe to do so;
- Blast management training and completion of regular tool-box talks to enforce the importance of blast impact mitigation will be undertaken by relevant quarry personnel.
- Daracon will not carry out more than 30 blasts a year, or more than 1 blast per day, without the written approval of the Planning Secretary;
- Daracon will not undertake blasting within 500 metres of any privately-owned land or any land not owned by the Applicant, unless suitable arrangements have been made with the landowner and any tenants to minimise the risk of flyrock-related impact to the property to the satisfaction of the Planning Secretary;

9.2 Additional Blast Mitigation Measures

As per procedures in this BMP, and in keeping with the Approval, the monitoring of emitted blast levels will be undertaken during quarrying operations to verify compliance with blast criteria and to assess the need, if any, for additional blast attenuation measures.

Daracon will ensure the development has a suitable meteorological station in the vicinity of the site that:
(a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and
(b) is capable of measuring meteorological conditions in accordance with the NSW Industrial Noise Policy (EPA, 2000),

unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.

Additionally, if any landowner of privately-owned land within 1 kilometre of the site claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the site, following commencement of operations within the extension area, then he/she may ask the Planning Secretary in writing to investigate the claim.

If the Planning Secretary is satisfied that an independent property investigation is warranted, Daracon will, within 3 months of the Planning Secretary's determination:

- Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to investigate the claim; and
- Give the landowner a copy of the property investigation repor;

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Daracon will repair the damages to the satisfaction of the Planning Secretary.

If Daracon or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Planning Secretary for resolution.

9.3 Continuous Improvement

As part of the operation of Ardglen Quarry and as required by Condition 5 of the Approval, Daracon will:

- Implement all reasonable and feasible blast mitigation measures;
- Investigate ways to reduce the blast impacts generated by the project,
- Report on these investigations and the implementation and effectiveness of these measures in the Annual Review, to the satisfaction of the Planning Secretary.

10. REVIEW AND IMPROVEMENT

10.1 Inspection and Review

The Quarry Supervisor shall monitor performance of the blast mitigation measures to confirm the effectiveness of methods, equipment and controls. Results shall be recorded and opportunities for improvement recommended to the QM.

The BMP and associated documentation shall be formally reviewed by the QM at minimum twelve (12) monthly intervals. Any reviews and alterations to the BMP shall be recorded according to the document control procedure.

We also commit to implementing the revision of strategies, plans and programs as set out in Condition 15, Schedule 2 of the Approval when required. Additionally, any revisions to the BMP will require the approval of the Planning Secretary before being implemented.

10.2 Audits

Conformance audits will be carried out on the relevant processes and subcontractors in accordance with the master audit schedule. Auditors shall be suitably qualified and independent of the processes being assessed.

The scope of audits undertaken will include incident notification, reporting and response, non-compliance notification, compliance report and independent audits in accordance with the relevant conditions of the Approval (Schedule 5 conditions 3, 3A, 4 and 5).

10.3 Records and Reporting

A summary of the blast monitoring results required by the Approval will be:

- Stored electronically in a central location for routine assessment;
- Provided on the Daracon Group website;
- Updated on a regular basis at least every 6 months;

Additionally, all blast management matters will be reviewed and included in the Annual Environmental Management Report (AEMR) due at the end of March the following year, such as:

- A description of the development including any additional mitigation measures employed;
- A comprehensive review of all monitoring results for the reporting period and an analysis of trends. These will be measured against the specific requirements set out in (i) – (iv) of Condition 4 Schedule 5 (b) of the Approval;
- Analysis and commentary on all incident notifications, non-compliance notifications, compliance reports and independent audits. This will include details of actions taken to rectify and avoid reoccurrence;
- Commentary on the effectiveness of controls implemented. This will evaluate and report on the effectiveness of the blast management systems and compliance with the performance measures, criteria and operating conditions of the Approval;
- Review and commentary on any discrepancies identified between predicted and actual impacts;

- Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development if required.

Blast monitoring results will be compared to the assessment criteria and guidelines detailed in Section 7 on at least a monthly (whilst quarry operations are being carried out) basis. Monitoring reports will also identify and comment on any exceedances and/or trends in monitoring results. Monitoring results will be reported internally to the Senior Manager and used as a basis for external reporting.

Any exceedances of blast assessment criteria or non-compliance with any statutory requirement will be treated as an environmental incident and handled according to the non-compliance notification procedure as detailed in Section 8.2 of this BMP.

Within 3 months of the approval of this BMP or any subsequent revision of this BMP, Daracon will:

- Provide a copy of the BMP to the relevant agencies and Community Consultation Committee (CCC).
- Put a copy of the BMP on the Daracon website

A copy of the Approval, as may be modified from time to time, will also be provided on the Daracon website.

11. Community Consultation and Complaints

A CCC has been established to address any concerns raised by local members of the community. Regular meetings of the CCC will continue to occur in accordance with Schedule 5, Condition 7 of the Approval.

A complaint process has been developed as is summarised as follows:

- A publicly advertised telephone complaints line will be utilized to receive complaints during operating hours and record complaints at other times.
- Ensure that all complaints are recorded on the relevant form and circulated to the necessary quarry personnel for action.
- Ensure that an initial response is provided within 24 hours of receipt of a complaint except in the event of complaints recorded when the quarry is not operational.
- Provide a report of complaints received every 12 months as part of the Annual Review.

The complaints record will include the following details for blast complaints:

- The date and time of the complaint.
- Any personal details the complainant wishes to provide or if no such details are provided a note to that effect.
- The nature of the blast that led to the complaint, including the time of the blast and its duration.
- The action taken by the quarry in relation to the complaint, including any follow-up contact with the complainant.
- If no action was taken by the quarry, the reason why no action was taken.

12. APPENDIX A – EPA CORRESPONDENCE

DOC21/1144670-2
14 January 2022

Planning and Assessment Division
Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124

EPA Submission on Request for Advice on Blast Management Plan

Thank you for the request for advice from Public Authority Consultation (PAE-34273794), requesting input from the NSW Environment Protection Authority (EPA) on the Blast Management Plan for Ardglen Quarry (MP06-0264-PA-21) at Quarry road, ARDGLEN NSW 2338.

The EPA does not provide advice on, or endorsement of, any site management plans developed for planning assessments. Accordingly, the EPA will not be providing further comment to this request.

If you have any questions about this request, please contact Daniel Stokes on (02) 4908 6804 or via email at info@epa.nsw.gov.au.

Yours sincerely

LINDSAY FULLOON
Manager Regional Operations
Regulatory Operations Regional West

APPENDIX 9 Environmental Protection Licence

Environment Protection Licence

Licence - 1115

Licence Details	
Number:	1115
Anniversary Date:	01-January

Licensee
BUTTAI GRAVEL PTY LTD
PO BOX 401
BERESFIELD NSW 2322

Premises
ARDGLEN QUARRY
QUARRY ROAD
ARDGLEN NSW 2338

Scheduled Activity
Crushing, grinding or separating
Extractive activities

Fee Based Activity	Scale
Crushing, grinding or separating	> 100000-500000 T annual processing capacity
Extractive activities	> 100000-500000 T annually extracted or processed

Contact Us
NSW EPA
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2150
Phone: 131 555
Email: info@epa.nsw.gov.au
Locked Bag 5022
PARRAMATTA NSW 2124

Environment Protection Licence

Licence - 1115

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

BUTTAI GRAVEL PTY LTD
PO BOX 401
BERESFIELD NSW 2322

subject to the conditions which follow.

Environment Protection Licence

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100000 - 500000 T annual processing capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annually extracted or processed

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
ARDGLEN QUARRY
QUARRY ROAD
ARDGLEN
NSW 2338
LOT 39 DP 751028, LOT 49 DP 751028, LOT 187 DP 751028, LOT 218 DP 751028, LOT 1 DP 1001734, LOT 1 DP 1164494

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
Onsite sewage treatment system

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
5	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Outlet of sediment basin to Doughboy Hollow Creek. Exact coordinates and map to be provided upon completion of sediment basin expansion works.

P1.3 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
2	Dust Monitoring		Dust deposition gauge located at the point identified as receptor 2 on the map titled" Figure 6.1 - Location of Receptors" in the report titled "Ardglen Quarry Extension - Environmental Assessment" dated 14 December 2006.
3	Dust Monitoring		Dust deposition gauge located at the point identified as receptor 5 on the map titled" Figure 6.1 - Location of Receptors" in the report titled "Ardglen Quarry Extension - Environmental Assessment" dated 14 December 2006.

4	Dust Monitoring	Dust deposition gauge located at the point identified as receptor 7 on the map titled" Figure 6.1 - Location of Receptors" in the report titled "Ardglen Quarry Extension - Environmental Assessment" dated 14 December 2006.

P1.4 The following point in the table are identified in this licence for the purpose of the monitoring of weather parameters at the point.

EPA Identification Point	Type of Monitoring Point	Description of Location
W1	Weather analysis	Location marked "Weather Station" on map provided to EPA on 2 May 2011 (DOC11/33859).

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 5

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre	-	-	-	10 and none visible

pH	pH	-	-	-	6.5-8.5
Total suspended solids	milligrams per litre	20	35	-	50

Note: The Licensee may apply to the EPA to use NTU as a limit condition other than TSS once the discharge point is operational and the Licensee has had the opportunity to obtain an approved method for assessing NTU.

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L3.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.

L4 Noise limits

L4.1 Noise from the premises must not exceed the noise limits in the table below. The locations referred to in the table are indicated by the 'Proposed Amendments to Noise Control Treatments', prepared by RCA Acoustics, dated August 2019.

Location	Day LAeq (15 minutes), dB(A)	Evening LAeq (15 minutes), dB(A)	Night LAeq (15 minutes), dB(A)	Night LAmax, dB(A)
Burraston	35	35	35	45
Rose	35	35	35	45
CM Thompson	44	35	35	45
M Taylor	45	35	35	45
S Thompson	45	35	35	45
Bates	37	35	35	45
Avery	38	35	35	45
Hall	36	35	35	45
McGhie	35	35	35	45
Purtell	36	35	35	45
J Taylor	43	35	35	45
Bojba	40	35	35	45
Other privately-owned land	35	35	35	45

L4.2 The noise limits set by this licence do not apply where a current legally binding agreement exists between the licensee and the occupant of a residential property that:
a) agrees to an alternative noise limit for that property; or
b)provides an alternative means of compensation to address noise impacts from the premises.

A copy of any agreement must be provided to the EPA before the licensee can take advantage of the agreement.

L4.3 For the purposes of Condition L4.1:

- Day is the period from 7am to 6pm Monday to Saturday, and 8am to 6pm Sunday and public holidays
- Evening is the period from 6pm to 10pm
- Night is the period from 10pm to 7am Monday to Saturday, and 10pm to 8am Sunday and public holidays

L4.4 The noise limits set out in L4.1 apply under all meteorological conditions except for:
a) Wind speeds greater than 3 metres per second at 10 metres above ground level
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres per second at 10 metres above ground level, or
c) Stability category G temperature inversion conditions.

L4.5 Noise from the premises must not exceed the limits in L4.1 positively adjusted by 5dB, during these meteorological conditions:
a) Wind speeds greater than 3 metres per second at 10 metres above ground level
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres per second at 10 metres above ground level, or
c) Stability category G temperature inversion conditions.

L4.6 To determine compliance:
a) With the LAeq (15 minute) noise limits in condition L4.1 and L4.4, the noise measurement equipment must be located:
i. Approximately on the boundary, where any dwelling is situated 30 metres or less from the boundary closest to the licensed premises; or,
ii. Within 30 metres of a dwelling façade, but not closer than 3 metres, where any dwelling on the property is situated more than 30 metres from the property boundary closes to the licensed premises; or, where applicable,
iii. Within 50 metres of the boundary of a National Park or Nature Reserve.
b) With the noise limits in condition L4.1 and L4.5, the noise measurement equipment must be located:
i. at the reasonably most affected point at a location where there is no dwelling at the location; or,
ii. at the reasonably most affected point within an area at a location prescribed by condition L4.6(a).

L4.7 A non-compliance of condition L4.1 and L4.5 will still occur where noise generated from the licensed premises in excess of the appropriate limit is measured:
a) at a location other than an area prescribed by condition L4.6(a); and/or,
b) at a point other than the most affected point at a location.

L4.8 The applicant must implement all feasible and reasonable noise abatement measures at the premises during operations, to minimise noise impacts on nearby sensitive receivers. This must include, but not limited to:
a) implementing recommended noise mitigation measures as outlined in Table 8-2 in “Proposed Amendments to Noise Control Treatments, RCA Acoustics” dated August 2019.

L4.9 For the purposes of determining the noise generated from the licensed premises the modification factors in Fact Sheet C of the Noise Policy for Industry must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Note: Should any noise complaints be received by the EPA regarding the extension, the EPA may require noise monitoring to be undertaken and/or noise mitigation measures to be implemented.

L5 Blasting

L5.1 The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.2 The overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.3 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.4 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.5 To determine compliance with condition(s) L5.1, L5.2, L5.3 and L5.4:

a) Airblast overpressure and ground vibration levels must be measured and electronically recorded at the locations identified as receptors 2 and 7 on the map entitled "Figure 6.1- Location of Receptors" in the report entitled "Ardglen Quarry Extension- Environmental Impact Assessment: dated 14 December 2006- for all blasts carried out in or on the premises; and
b) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.

L5.6 Blasting operations at the premises may only take place between 10:00am to 3:00pm, Monday to Friday. No blasting is to occur on Sunday or public holidays. (Where compelling safety reasons exist, the Authority may permit a blast to occur outside the abovementioned hours. Prior written notification of any such blast must be made to the Authority).

L6 Hours of operation

L6.1 The licensee must comply with the following hours of operation for the listed activities below:

Activity	Day	Time
Topsoil/overburden removal/emplacement	Monday-Saturday	7:00am to 5:00pm
	Sunday	None
In-pit activities (including drilling, extraction, and transfer of material out of pit)	Monday-Saturday	7:00am to 5:30pm
	Sundays and Public Holidays	None
Out-of-pit activities (including processing and stockpiling)	Monday-Saturday	7:00am to 5:30pm
	Sundays and Public Holidays	None
Maintenance (if inaudible at nearby residences)	Monday-Sunday	Any time
Truck loading and distribution	Monday-Saturday	6:30am to 5:30pm
	Sundays and Public Holidays	None
Rail loading	Monday-Sunday	7:00am to 10:00pm

L6.2 The licensee may load no more than 2 trains outside of the rail loading hours above, as consistent with the Modification 2 Development Consent.

L7 Other limit conditions

L7.1 The licensee must not extract or process more than 500,000 tonnes of material per year at the premises.

L7.2 The licensee must not transport more than:

(a) 250,000 tonnes of quarrying products from the site by rail a year;
(b) 500,000 tonnes of quarrying products from the site by road a year;
(c) a combined total of 500,000 tonnes of quarrying products by rail and/or road a year.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

POINT 5

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Weekly during any discharge	Representative sample
pH	pH	Continuous during discharge	Representative sample
Total suspended solids	milligrams per litre	Continuous during discharge	Representative sample

M2.3 Air Monitoring Requirements

POINT 2,3,4

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

Note: The Licensee may apply to the EPA to use NTU as a monitoring condition other than TSS once the discharge point is operational and the Licensee has had the opportunity to obtain an approved method for assessing NTU.

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M3.2 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2021* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Weather monitoring

M4.1 For each monitoring specified below (by point number), the licensee must monitor (by sampling and obtaining results by analysis) each weather parameter specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm/hr	continuous	1 hour	AM-4
Wind speed @ 10 metres	m/sec	continuous	15 minute	AM-2 & AM-4
Wind direction @ 10 metres	o	continuous	15 minute	AM-2 & AM-4
Temperature @ 2 metres	oC	continuous	15 minute	AM-4
Temperature @ 10 metres	oC	continuous	15 minute	AM-4
Sigma theta @ 10 metres	o	continuous	15 minute	AM-2 & AM-4
Solar Radiation	W/m2	continuous	15 minute	AM-4
Siting				AM-1 & AM-4 & Special Method 1
Measurement				AM-2 & AM-4 & Special Method 1

M4.2 For the purposes of the table(s) above ‘Special Method 1' means that the applicant must install a permanent meteorological monitoring station and logger. The location of the site chosen for the station and details of equipment, measurement and maintenance/service procedures and schedules to be installed and maintained must be submitted in writing to the EPA and approved in writing by the EPA before any sampling or analysis is carried out. The meteorological monitoring station must be calibrated at least once every 12 months. The EPA is to be provided with the data on request in a Microsoft ® Office software compatible format.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making

reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 27-April-2000

Environment Protection Licence

Licence - 1115

End Notes

1	Licence varied by notice 1004170, issued on 07-Sep-2001, which came into effect on 02-Oct-2001.
2	Licence transferred through application 140785, approved on 21-Sep-2001, which came into effect on 21-Mar-2001.
3	Licence varied by change to record due to LGA amalgamation, issued on 03-Nov-2004, which came into effect on 03-Nov-2004.
4	Licence varied by correction to EPA Region, issued on 16-Mar-2005, which came into effect on 16-Mar-2005.
5	Licence transferred through application 143445, approved on 11-May-2005, which came into effect on 14-Apr-2005.
6	Licence varied by correction to EPA data record, issued on 24-May-2005, which came into effect on 24-May-2005.
7	Licence varied by notice 1063111, issued on 04-Jan-2007, which came into effect on 04-Jan-2007.
8	Licence varied by notice 1081258, issued on 04-Apr-2008, which came into effect on 04-Apr-2008.
9	Licence varied by notice 1089019, issued on 09-Jul-2008, which came into effect on 09-Jul-2008.
10	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
11	Licence varied by notice 1500477 issued on 02-Sep-2011
12	Licence varied by notice 1614992 issued on 30-Mar-2022