Explosives Safety			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

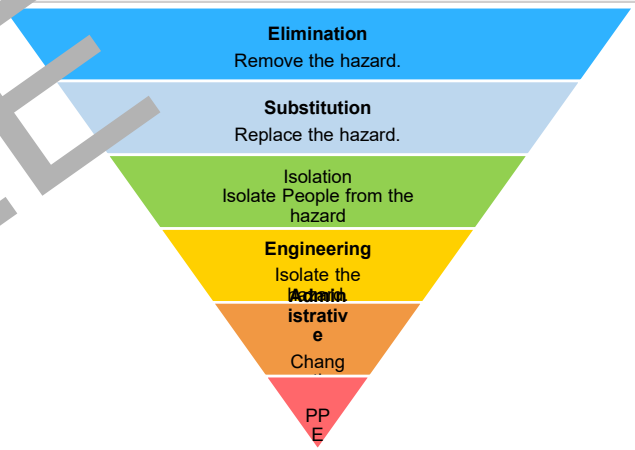
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS	
Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Regulatory Compliance & Licensing Management	• Use of explosives or blasting work without current licences, permits or authorisations • Explosives storage, transport or use not compliant with WHS Act 2011, Explosives legislation and relevant Australian Standards (e.g. AS 2187 series) • Failure to notify regulators, utilities or affected parties prior to controlled blasting or rock blasting activities • Inadequate system for tracking licence expiries and competency renewals for shotfirers and explosives handlers • Unclear delegation of legal responsibilities between PCBU, principal contractor and subcontractors • Non-compliance with conditions of approval for blasting near public roads, services or sensitive receptors • Use of explosives for unusual tasks (e.g. stump removal) without confirming specific legislative requirements and environmental constraints	4A	• Establish and maintain a legal register covering all applicable explosives, dangerous goods and WHS legislation, codes of practice and standards relevant to controlled blasting, rock blasting and stump removal • Implement a licence and competency management system to record, verify and track expiry dates for shotfirers, explosives drivers, storage licence holders and blasting supervisors • Develop a formal regulatory notification procedure covering pre-blast notifications to WHS regulators, police, local councils, utilities, road authorities and nearby workplaces or residents as required • Assign a competent Explosives Responsible Person with clear authority and accountability for ensuring compliance with all licensing and blasting approval conditions • Undertake periodic independent compliance audits against WHS Act 2011, explosives regulations and site-specific approvals, including corrective action close-out tracking • Integrate explosives legal requirements into company WHS management system, including policy statements, procedures and training materials • Require written verification that any non-standard explosive applications (e.g. stump removal) have regulatory approval, environmental clearances and a dedicated risk assessment prior to work • Maintain documented standard conditions for blasting near public roads, services and third-party property, with management review and approval for any deviations	3H
2. Explosives Procurement, Transport & Chain of Custody	• Procurement of incorrect explosive type, detonators or accessories for the intended blasting work • Supply from vendors that do not comply with Australian explosives manufacture and transport regulations • Loss, theft or diversion of explosives or detonators due to weak chain-of-custody systems • Inadequate security during road transport and site delivery of explosives and detonators • Poor segregation of detonators and bulk explosives during transport, increasing risk of inadvertent initiation	4A	• Approve a limited panel of licensed explosives suppliers who can demonstrate compliance with relevant Australian explosives manufacture, packaging and transport standards • Implement a formal explosives procurement policy specifying approved products, compatibility requirements and prohibiting non-standard products without engineering review and risk assessment • Establish a documented chain-of-custody procedure covering ordering, dispatch, transport, receipt, issue to shotfirer, use, and post-blast reconciliation of explosives and detonators • Require that all explosives transport is undertaken by licensed carriers with compliant vehicles, security arrangements and emergency response documentation • Implement procedures for physical and system-based segregation of detonators and explosives during transport and on arrival at site, in line with relevant explosives codes and standards • Use controlled access delivery points with sign-on/sign-off verification and ID checks for persons authorised to receive explosives on site • Maintain an explosives register with daily stock balances, including separate accounting for detonators, boosters and bulk products, and conduct scheduled stock audits	2M

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	• Failure to verify quantities received, resulting in unaccounted explosives after blasting activities		• Develop incident procedures for loss, theft or discrepancy in explosives stock, including immediate notification to management, regulators and police as required	
3. Explosives Storage Facilities & Inventory Control	• Inadequate design, construction or siting of magazines for storage of explosives or detonators • Insufficient separation distances from public areas, occupied buildings, fuel stores or infrastructure • Poor stock rotation leading to degradation, misfires or instability of explosives • Unsecured magazines allowing unauthorised access, pilferage or deliberate misuse • Inadequate systems for temperature, ventilation and moisture control in magazines • Failure to reconcile pre- and post-blast stock levels, leaving unaccounted explosives on site	4A	• Design and maintain explosives magazines in accordance with relevant Australian Standards and regulatory separation distance requirements, with engineering sign-off • Undertake formal site selection studies for storage locations, documenting exclusion zones, blast overpressure considerations and protection of public access areas • Implement strict inventory management procedures including first-in-first-out stock rotation, expiry tracking and formal disposal pathways for out-of-date explosives • Install robust access control systems for magazines (locks, key control, access logs, CCTV where appropriate) and maintain a current authorised access list • Develop and enforce magazine housekeeping and inspection procedures addressing structural integrity, ventilation, drainage, pest control, cleanliness and signage • Conduct scheduled stock reconciliations (daily during blasting campaigns) with documented investigation and immediate escalation of any discrepancies • Integrate explosives inventory data with corporate WHS and security systems to enable trend analysis and early detection of anomalies • Establish emergency arrangements for magazine incidents (fire, flooding, unauthorised entry) including isolation, evacuation triggers and regulator notification protocols	2M
4. Organisational Structure, Roles & Responsibilities for Blasting	• Unclear allocation of responsibilities between PCBU, mine/quarry manager, blasting contractor and subcontractors • No formally appointed, competent shotfirer or blasting engineer with authority over explosives safety decisions • Conflicting instructions from production and safety leadership resulting in unsafe compromises on blast design or exclusion zones • Inadequate supervision of blasting operations, particularly for new crews or non-routine blasting (e.g. stump removal near utilities) • Failure to provide relief coverage, leading to fatigue and rushed decision-making by key blasting personnel	3H	[redacted]	2M

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			[redacted]	
5. Competency, Training & Authorisation for Explosives Work	• Use of explosives by personnel without required licences, tickets or verified competencies • Insufficient training in explosives-specific WHS procedures, leading to unsafe practices • Inadequate understanding of blast design principles, leading to miscalculation of charge weights or delays • Lack of training in controlled blasting near structures, services or sensitive environments • Poor familiarisation with specific initiation systems, electronic detonato or remote firing systems • Failure to provide refresher training, causing skill fade for infr ly performed tasks suc s stump removal blasting	4A	[redacted]	2M
6. Blast Design, Planning & Engineering Review	• Inadequate blast design for geolo al conditions, leading to flyrock, ex sive vibration or loss of contro • Failure to account for nearby infrastructure, underground services, buildings or public areas in blast design • Inappropriate explosive type, charge weight or delay timing for controlled blasting objectives • Insufficient engineering review of rock blasting patterns, stemming and burden, increasing risk of misfires or uncontrolled rock movement	4A	[redacted]	2M

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SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Use of generic or copied blast designs for unique tasks such as stump removal without proper risk assessment • Poor integration of environmental considerations (noise, dust, vibration) into blast design		[redacted]	
7. Blast Zone Definition, Access Control & Public Protection	• Incorrectly defined blast zones, resulting in people or plant within hazard areas at time of firing • Inadequate exclusion distances for flyrock, airblast or ground vibration effects • Unauthorised entry into blast zones due to inadequate signa[illegible]rricading or supervision • Failure to protect[illegible]ublic roads, walkways, adjoinin[illegible] areas during blasting • Poorly controlled vehicle and pedestrian movement ar[illegible] zones and firing lines	4A	[redacted]	2M
8. Communication, Warning Systems & Blast Coordination	• Failure to notify workers, neighbours and affected parties of blasting schedules and exclusion times • Ineffective pre-blast briefing, causing misunderstanding of blast zones, roles or timings	3H	[redacted]	2M

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	• Inadequate warning signals (sirens, radios, signage) leading to people remaining in hazardous areas • Communication breakdown between shotfirer, spotters, supervisors and traffic controllers • Lack of contingency plans for communication failure during blast countdown or misfire events		[redacted]	
9. Explosives Handling, Segregation & Initiation Systems Management	• Incorrect storage or handling of detonators leading to unintentional initiation • Mixing incompatible [redacted] products or initiation systems • Static electricity, [redacted] interference or stray [redacted] affecting detonators and firing systems • Inadequate controls over initiation devices (keys, blasting machines, remote units) • Poor procedural control for priming, charging and tying-in, increasing risk of misfires or partial detonation • Lack of standard procedures for handling explosives in adverse weather conditions (heat, lightning, storms)	4A	[redacted]	2M
10. Misfire, Post-Blast Inspection & Recovery Management	• Unmanaged misfires resulting in delayed or unexpected detonation	4A		2M

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	• Failure to identify and control misfires after rock blasting or stump removal activities • Inadequate post-blast inspection causing undetected explosives remnants • Premature re-entry into blast area before it has been fully cleared • Uncontrolled handling or disposal of misfired charges or unexploded explosives		[redacted]	
11. Contractor Management & Interface with Other Operations	• Blasting contractors operating under different or lower standards than the principal PCBU's WHS and explosives procedures • Poor coordination between blasting activities and other site operations such as earthworks, drilling, traffic and public access • Unclear responsibilities at interfaces (e.g. between quarry operations, tree clearing teams and blasting crews for stump removal) • Inadequate induction of contractors into site-specific blast zoning, communication and emergency procedures • Simultaneous operations leading to people or plant entering blast zones inadvertently	3H	[redacted]	2M

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			[redacted]	
12. Environmental, Community & Sensitive Receptor Management	• Excessive blast vibration or airblast affecting nearby residents, buildings or infrastructure • Noise, dust and flyrock impacts leading to community complaints or property damage • Unmanaged blasting effects on environmentally sensitive areas, waterways, flora or fauna • Poor community consultation about controlled blasting programs, causing distrust and reputational damage • Use of explosives for rock blasting or stump removal near cultural heritage or archaeological sites without proper assessment	3H	[redacted]	2M
13. Emergency Preparedness, Response & Incident Management	• Inadequate preparedness for explosives-related emergencies such as accidental detonation, fire near magazines or transport incidents • Lack of coordinated response between site, emergency services and regulators for blasting incidents • Poorly practised evacuation and lockdown procedures for blast-related emergencies • Failure to manage psychological impacts on workers and community following serious blasting incidents	3H	[redacted]	2M

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			[redacted]	
14. Security, Terrorism Risk & Unauthorised Access to Explosives	• Theft or diversion of explosives or detonators for criminal or terrorist purposes • Unauthorised access to magazines, explosive vehicles or blast areas by intruders or disgruntled workers • Insider threat where authorised personnel misuse access for intentional harm • Inadequate vetting of staff and contractors with access to explosives or sensitive blasting information	4A	[redacted]	2M
15. Monitoring, Audit, Review & Continuous Improvement of Explosives Management	• Failure to detect systemic weaknesses in explosives safety management until a serious incident occurs • Outdated procedures, blast designs or training materials not reflecting current legislation or best practice • Data from blast performance, incidents and community feedback not used to improve controls • Complacency over time leading to erosion of safety culture around explosives use	3H	[redacted]	1L

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EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work