

Backhoe

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS 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	HIERARCHY OF CONTROLS	
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.	
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard	
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change	
								PPE	

Risk Rating & Required Action:	
4A	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. 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. Governance, WHS Duties and Safety Leadership	<ul style="list-style-type: none"> PCBU and officers not clearly understanding WHS Act 2011 duties in relation to plant (backhoes and attachments) Absence of documented WHS policy specific to mobile plant and earthmoving operations Inadequate resourcing for WHS (time, budget, competent people) to manage backhoe risks No formal process for consultation with workers and health and safety representatives (HSRs) about backhoe and front-end loader risks Safety culture that tolerates shortcuts and production pressure over safe systems of work Lack of documented safety objectives and KPIs for plant-related risk management 	4A	<ul style="list-style-type: none"> Define and document WHS governance structure outlining WHS Act 2011 duties for officers, managers, supervisors and operators in relation to backhoes and attachments Develop and endorse a company-wide Mobile Plant and Earthmoving WHS Policy signed by senior management, referencing WHS Act 2011 and relevant WHS Regulations (Plant) Allocate sufficient budget and resources for training, maintenance, supervision, and safety improvements for backhoe and front-end loader operations Establish formal WHS consultation arrangements including regular toolbox talks and safety committee meetings specifically addressing plant hazards and incidents Set measurable WHS performance indicators related to backhoe use (e.g. pre-start compliance, near-miss reporting rate, attachment change-out incidents) Include plant safety leadership responsibilities in position descriptions and annual performance reviews for key managers and supervisors Implement an internal audit and management review program for plant safety systems, with action tracking and closure 	3H
2. Plant Procurement, Design and Engineering Controls	<ul style="list-style-type: none"> Procurement of backhoes or front-end loader attachments that do not fit for purpose or not compliant with Australian Standards Lack of risk-based technical specifications leading to missing safety features (ROPS, FOPS, emergency stops, interlocks) Incompatibility between backhoe base unit and attachments (hydraulic, mechanical or load-rating mismatch) Imported plant without appropriate modification, guarding or documentation for Australian conditions Failure to consider visibility, ergonomics and noise/vibration in plant selection No formal engineering assessment of lifting capacity and stability when using different attachments 	4A	<ul style="list-style-type: none"> Develop a formal plant procurement procedure requiring WHS and engineering input into backhoe and attachment selection Specify compliance with relevant Australian Standards (e.g. AS 1418, AS 4024 series, ROPS/FOPS standards) and manufacturer requirements in purchase contracts Require suppliers to provide plant risk assessments, load charts, stability data and attachment compatibility documentation for each model and attachment Ensure all backhoes are supplied with certified ROPS and, where required, FOPS, operator protective structures and adequate guarding of moving parts and pinch points Specify mandatory engineering controls such as attachment locking interlocks, load moment indicators (where applicable), reversing cameras, proximity alarms and adequate lighting Engage a competent engineer to review lifting capacities, stability envelopes and de-rating factors for different backhoe and front-end loader attachment configurations Implement a pre-acceptance inspection and commissioning checklist before plant is brought into service, verifying all safety features and documentation 	2M

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3. Backhoe Attachments and Front-End Loader Configuration Management	<ul style="list-style-type: none"> • Use of non-genuine or non-rated attachments on the backhoe or front-end loader • Incorrect attachment for task leading to overloading, instability or uncontrolled movement • Inadequate system to verify that attachment locking and quick-hitch mechanisms are correctly engaged • Lack of control over modification or welding on buckets, forks or lifting points, invalidating ratings • No documented system for assessing and approving new or specialised attachments • Load charts and rating information for attachments not readily available to supervisors and planners 	4A	<ul style="list-style-type: none"> • Develop an attachment management procedure covering selection, approval, inspection, storage and identification of all backhoe and front-end loader attachments • Maintain an attachment register including serial numbers, SWL/WLL, compatible machine models, and engineering certification where applicable • Restrict the use of quick-hitch and lifting attachments to those with positive locking and indication systems that meet manufacturer and regulatory requirements • Implement a formal engineering approval process for modifications or additions (e.g. lifting lugs) to attachments, including rated lifting plates and documentation • Ensure current load charts and attachment compatibility matrices are accessible in the cab and electronically to supervisors and planners • Train supervisors and planners in correct selection of attachments for specific tasks based on load, ground conditions and reach requirements • Schedule regular inspections of attachment locking mechanisms and structural condition as part of the maintenance system 	2M
4. Competency, Licensing, Training and Verification of Competence	<ul style="list-style-type: none"> • Operators using backhoes or front-end loader functions without appropriate training, certification or verification of competence • Supervisors unable to adequately assess operator skills and safe work practices • No recognition of specialised skills required for complex tasks (e.g. lifting with backhoe, working near services, confined spaces or edges) • Training limited to generic inductions without plant- and site-specific risk content • Training records incomplete or not linked to plant access permissions • No refresher or re-assessment following incidents, near misses or long breaks from operating 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M
5. Maintenance, Inspection and Pre-Start Systems	<ul style="list-style-type: none"> • Inadequate preventive maintenance leading to mechanical failures (brakes, hydraulics, steering, tyres, boom and loader arms) 	4A	<p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> No formal system for reporting, isolating and rectifying defects on backhoes and attachments Pre-start checks not consistently completed, or completed superficially, due to poor systems or supervision Use of backhoes or front-end loader attachments beyond their service life or with known structural defects Failure to track service intervals and inspection requirements for high-risk components (e.g. lifting chains, pins, quick-hitch systems) Lack of verification that contractors' equipment is maintained to equivalent standards 		[REDACTED]	
6. Site Planning, Traffic Management and Segregation	<ul style="list-style-type: none"> Uncontrolled interaction between backhoes, other mobile plant, light vehicles and pedestrians Inadequate traffic management plan for shared work areas and loading zones Poorly defined or unmarked exclusion zones around backhoe swing area and loader operating envelope No system to control access of visitors or non-essential personnel near operating plant Insufficient planning for reversing movements, tight spaces and blind spots Lack of coordination between multiple contractors operating plant on the same site 	1A	[REDACTED]	2M
7. Work Planning, Job Hazard Analysis and Permit Systems	<ul style="list-style-type: none"> Backhoe tasks commenced without adequate planning or documented risk assessment at the job level Complex or non-routine tasks (e.g. working near live services, on steep batters, or lifting with the backhoe) not subject to additional control systems 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Failure to identify and control ground conditions, underground services or overhead powerlines before commencing excavation or loading work Inconsistent use of Job Hazard Analysis (JHA) or task-based risk assessments by supervisors No system to escalate high-risk work for approval by higher-level management Poor integration between planning documents (JHA, SWMS, permits) and the actual site conditions 		[REDACTED]	
8. Underground and Overhead Services Management	<ul style="list-style-type: none"> Contact with live underground services (electricity, gas, water, communications) during backhoe excavation or trenching Contact with overhead powerlines when raising booms or operating front-end loader buckets Inadequate systems for locating and marking services before work Reliance on outdated or inaccurate service plans without verification No clear exclusion zones or approach distances to overhead or underground services Lack of coordination with utility owners and failure to obtain required permits or clearances 		[REDACTED]	2M
9. Ground Conditions, Slopes, Stability and Tipping Risk	<ul style="list-style-type: none"> Backhoe rollover or loss of stability due to operating on steep or uneven ground Failure of ground under stabilisers or front-end loader wheels, particularly near trenches, pits or retaining structures Inadequate systems for assessing soil type, compaction and moisture effects before backhoe work 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> No formal controls for working near edges, excavations, soft verges or culverts Inappropriate bucket loading, boom positioning or travel with raised loads increasing centre of gravity Uncontrolled changes to site conditions (rain, dewatering, traffic) not fed back into planning and controls 		[REDACTED]	
10. Operator Environment, Fatigue, and Human Factors	<ul style="list-style-type: none"> Operator fatigue leading to errors, reduced vigilance and poor decision making Cab design, controls layout or visibility issues contributing to strain, distraction or blind spots Inadequate management of long shifts, night work or remote work for backhoe operators Distraction from mobile phones, two way radio use or other communication devices Poorly managed breaks, hydration and heat exposure affecting operator performance No formal system for reporting fitness for work concerns (fatigue, alcohol and other drugs, medical issues) 	3H	[REDACTED]	2M
11. Contractor and Hire Plant Management	<ul style="list-style-type: none"> Hired backhoes or contract operators working under different standards to principal contractor systems Inadequate verification of contractor operator competency, licensing and plant maintenance Confusion over who controls work, issues instructions, and manages WHS risks on shared worksites Contract terms that prioritise productivity or price without clear WHS performance expectations 	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> Limited communication of site-specific hazards, rules and traffic plans to contractor operators Inadequate oversight of short-term or ad-hoc hire plant and operators 		[REDACTED]	
12. Environmental and Health Exposures (Noise, Dust, Vibration, Diesel)	<ul style="list-style-type: none"> Excessive occupational noise exposure from backhoe operation leading to hearing damage Respirable dust, silica or diesel particulate exposure from excavation and loading activities Whole-body vibration and repetitive strain from prolonged backhoe and loader operation Poor management of exhaust emissions in enclosed or semi-enclosed areas Inadequate planning for dust suppression affecting visibility and community amenity No monitoring or health surveillance for workers exposed to identified health hazards 	3H	[REDACTED]	2M
13. Emergency Preparedness, Incident Management and Recovery	<ul style="list-style-type: none"> Delayed or ineffective response to plant-related incidents such as rollovers, entrapment, service strikes or mechanical failures Operators and supervisors unclear on emergency procedures and communication protocols Lack of suitable rescue and recovery equipment or plans for incidents involving backhoes and attachments Inadequate incident investigation and root-cause analysis, leading to repeated system failures Poor communication with emergency services about site access and plant hazards 	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> No structured process for post-incident review and implementation of corrective actions 		[REDACTED]	
14. Documentation, Records, Monitoring and Continuous Improvement	<ul style="list-style-type: none"> Critical WHS procedures for backhoe use not documented, outdated or inaccessible to workers Inconsistent record-keeping for training, inspections, maintenance, permits and incident investigations Lack of systematic review of WHS performance data relating to plant operations No feedback loop from incidents, audits or worker suggestions into plant risk controls Over-reliance on informal communication and undocumented practices for backhoe operations Non-compliance with regulatory requirements for record retention and evidence of due diligence 	3H	[REDACTED]	1L

SAMPLE

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>

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>

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-codes-of-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>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011
 Work Health and Safety (National Uniform Legislation) Regulation 2011
 Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>
 Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-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>

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>

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

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.