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

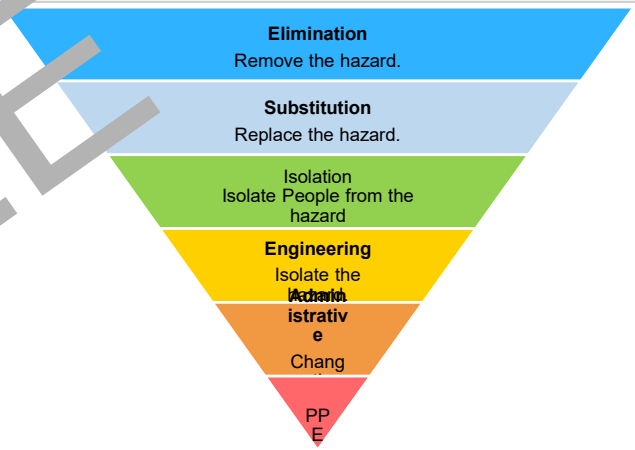
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS	SCOPE OF WORKS
Client:	
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. Governance, WHS Duties and Consultation	• Lack of clear allocation of WHS responsibilities for waterjet cutter ownership, control and use, leading to non-compliance with WHS Act 2011 primary duty of care and officer due diligence duties • Inadequate consultation with workers, health and safety representatives and contractors about waterjet cutter risks and control measures, resulting in unidentified hazards and poor uptake of controls • Absence of a formal WHS policy or plant safety procedure that specifically addresses high-pressure waterjet cutting, leading to inconsistent risk management practices • Insufficient arrangements for coordination and cooperation between PCBUs sharing the workplace (e.g. ho employer, labour hire provider, maintenance contractors) regarding th waterjet cutter • Poor change mana ment when new waterjet cutters, so are, or cutting media are introduc d, leading t unmanaged systen	High	• Establish and document a plant safety gover framework that explicitly includes the waterjet cutter, defining the PCBUs involved, their WHS roles, a interfaces i e with WHS Act 2011 sections 19–27 • Develop a WHS policy and a ecific 'Waterjet Cu r M gement Procedure' that outline expectations for procurement, install ion, op tion, maintenance, ining and incident management • Formalise wor consult on arra ements (: HSRs, WHS committee, toolbox meetings) specifically including wa et cutter iss s, and r ord d isions and agreed control measures • Impl ent a BU-to- BU consulta on and cooperation protocol for situations where labour hire, contra or thi es operate or service the waterjet cutter, including documented responsibilities and in ion sha g • Introd e a mal m agement of change (MOC) process for any modification to waterjet plant, pressure ating guardi g, software, control systems, layout or work methods, requiring risk assessment sign ff befo implementation • Ensu icers (e.g. directors, senior managers) receive regular briefings on waterjet-specific WHS risks d control effectiveness to support due diligence obligations, with evidence retained (minutes, action re sters)	Medium
2. Procurement, Design and Installation of Waterjet Cutter	• Procurement of waterjet cutter plan that does not meet Australian Standards, manufacturer specifications or relevant WHS Regulation plant requirements (e.g. pressure equipment, emergency stops, guarding) • Inadequate specification of safety features during purchasing (e.g. interlocked guards, emergency stop devices, pressure relief valves, automatic shut-off, debris containment, noise control, software safety interlocks) • Lack of verification that imported plant is properly designed, registered (if required) and fit for purpose in	High	• Implement a formal plant procurement procedure requiring WHS input for all waterjet cutter purchases, including documented safety specifications, conformance to relevant Australian Standards and WHS Regulation requirements • Require suppliers to provide technical documentation, risk assessments, plant registration information (if applicable), declarations of conformity and instructions for safe use and maintenance as part of the purchasing contract • Include mandatory safety features in procurement criteria (e.g. fully enclosed cutting area or effective splash guards, interlocked access doors, accessible emergency stops, pressure relief systems, noise suppression, debris containment features, fail-safe control systems) • Conduct a pre-purchase WHS risk review of proposed equipment and site layout, including consideration of line of sight, access, emergency egress, separation from other plant and pedestrian traffic, and potential for flying debris or high-pressure leaks	Medium

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	Australian conditions, including electrical and pressure ratings • Poorly planned installation and layout resulting in inadequate exclusion zones, egress, access for maintenance, and segregation from other work activities and traffic routes • Failure to formally commission and validate safety systems, interlocks and controls before first production use		• Develop an installation and commissioning plan that includes verification of electrical safety, pressure system integrity, functional testing of emergency stops and interlocks, and sign-off by a competent person before routine operation • Maintain a plant register that records make, model, serial number, commissioning date, location, and any registration details required under the WHS Regulation	
3. Engineering Controls, Guarding and Safety Systems	• Insufficient physical guarding or enclosure leading to exposure to high-pressure water jets, abrasive media, flying debris and noise • Bypass or defeat of safety interlocks, emergency stops or other engineering controls to speed up production or maintenance tasks • Inadequate design, selection or maintenance of pressure relief devices and hoses, increasing risk of hose whip, rupture or high-pressure injection injuries • Poor integration of control systems (e.g. CNC, PLC, software safety) that can result in unexpected movement or jet activation or loss of • Lack of systematic verification and validation of safety-critical functions after maintenance, software updates or modifications	High	• Specify, design and maintain fixed guards, full or partial enclosures and viewing systems (e.g. windows, cameras) to prevent direct exposure to the jet and debris while maintaining operator visibility • Ensure access doors and hatches into the cutting area are interlocked so that opening them automatically isolates high-pressure energy and stops motion, with interlocks designed to be tamper evident • Select and use the design and rating of high-pressure components (hoses, fittings, nozzles) to meet or exceed manufacturer and regulatory requirements, and document replacement intervals and inspection criteria • Implement a formal process to prevent intentional defeat of safety systems, including management approval for any temporary overrides, lockable bypass keys, short time limits and written justification • Establish a programmed testing regime for emergency stop functions, interlocks, pressure relief devices and other safety-critical systems, with results logged and defects tracked to closure • Require formal verification and sign-off by a competent person after any changes to control systems or software, including regression testing of all interlocks and safety functions before returning to service	Low
4. Competency, Training and Authorisation	• Operators, setters and supervisors lacking specific competency in high-pressure waterjet cutting systems, resulting in unsafe system set-up, incorrect parameter selection or inappropriate responses to alarms • Inadequate training on WHS legal duties, site procedures, plant isolation, lockout/tagout, and emergency response relevant to the waterjet cutter • No formal authorisation system, allowing untrained or inexperienced	High	[redacted]	Medium

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	workers, contractors or apprentices to operate or change settings on the waterjet cutter • Training delivered informally or once-off, with no verification of competence or periodic refresher training • Failure to ensure maintenance personnel, including external contractors, are competent in the specific waterjet system, high-pressure components and associated hazards		[redacted]	
5. Safe Systems of Work and Procedures	• Absence of documented safe systems of work for set-up, programming, operation, cleaning, jam clearing, and shutdown of the waterjet cutter, leading to ad hoc practices • Procedures that focus only on normal production and fail to address non-routine tasks such as troubleshooting, inspection, nozzle changes, and dealing with blockages • Inconsistent application of isolation an lockout/tagout proces when accessing hazardou zones or performing adjustr nts and maintenance • Reliance on informal verbal instructions, leading to differing wo practices between shifts and te s • Failure to integrate waterjet cutter procedures into broader workplace systems such as permit to work, confined space, hot work and hazardous chemicals management (for abrasive additives or cutting aids)	igh	[redacted]	Medium
6. Maintenance, Inspection and Asset Management	• Lack of a planned preventive maintenance program for high-pressure components, leading to hose failure, fitting rupture, leaks and high-pressure injection hazards • Reactive maintenance culture where defects are only addressed after failure,	High	[redacted]	Medium

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	increasing risk of sudden loss of containment or malfunction • Incomplete or inaccurate maintenance records, making it difficult to track component life, recurring faults or systemic issues • Failure to control the quality of spare parts and consumables, resulting in use of non-approved hoses, fittings, or nozzles not rated for the operating pressure • Inadequate isolation, lockout and verification processes used by maintenance staff when working on the waterjet cutter		[redacted]	
7. Physical Environment, Layout and Housekeeping	• Water accumulation, slurry and offcuts around the waterjet cutter causing slips, trips and falls, as well as electrical hazards • Inadequate lighting, signage and demarcation of exclusion zones leadin to inadvertent entry into hazardous areas during operation o tenance • Poor separation b ween the waterjet cutter and other pl t, vehicles o pedestrian traffic, i asi e ris f collision, distraction o xposure to debris and noise • Insufficient ventilation o ist trol, resulting in accumulation of fine aerosol, dust or chemical additives in the breathing zone • Inadequate storage and handling systems for abrasive media, cut materials and waste, leading to manual handling risks and cluttered access ways	Medium	[redacted]	Low
8. Hazardous Substances, Noise and Occupational Health Risks	• Exposure to fine particulate matter, including respirable dust from abrasive media and cut materials, generating inhalation and longer-term health risks • Use of chemical additives, corrosion inhibitors or water treatment agents	High	[redacted]	Medium

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	without proper risk assessment or controls, causing skin, eye or respiratory irritation • High noise levels from pumps, high-pressure lines and cutting action, leading to hearing damage if not controlled • Inadequate health surveillance or monitoring, resulting in unrecognised occupational disease risks associated with prolonged waterjet cutting work		[redacted]	
9. Emergency Preparedness and Incident Management	• Lack of specific emergency response planning for high-pressure injection injuries, major leaks, hose failures or structural failures of the cutting enclosure • Inadequate first a capability and supplies relevant t acerations, injection injuries, eye injurie nd ass ed with the waterjet area • Poor familiarity of workers, super ors and first aiders with emer shutdown procedures and escalation pathways • Failure to systematically report, investigate and learn from incidents and near misses involving the waterjet cutter, allowing repeat events	High	[redacted]	Medium
10. Monitoring, Audit and Continuous Improvement	• No systematic process to monitor the effectiveness of waterjet cutter control measures over time, resulting in control degradation	Medium	[redacted]	Low

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	• Failure to keep WHS documentation (procedures, risk assessments, training records) current as technology, work practices or legislation change • Lack of performance indicators for waterjet safety, making it difficult for management to identify trends and intervene early • Limited worker involvement in continuous improvement, resulting in missed opportunities to identify practical enhancements to safety systems		[redacted]	

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