Inhaling Toxic Emissions From Machinery Risk Assessment

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:

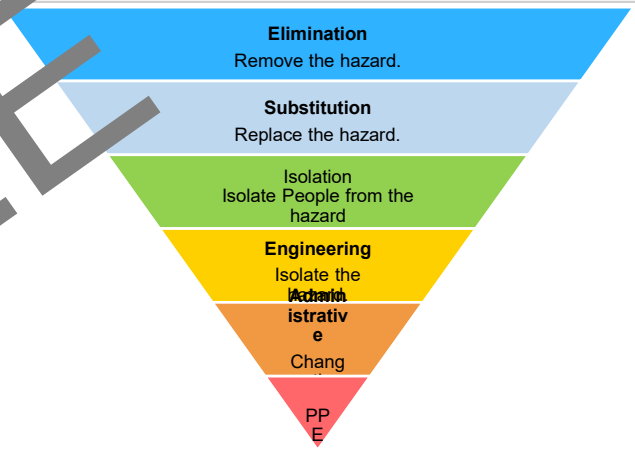
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

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 place 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. Preparation	Inadequate knowledge of machinery operations, Incorrect safety gear	3H	- Conduct training sessions for workers on machinery operation and risks - Provide comprehensive induction about potential hazards - Ensure all workers are equipped with Personal Protective Equipment (PPE) - Display clear instructions and safety guidelines near machinery - Implement a buddy system for inexperienced workers - Regularly update training materials and conduct refresher courses - Enforce strict supervision by experienced personnel - Review procedural documentation regularly - Ensure access to safety manuals and material safety data sheets (MSDS) - Conduct pre-operational briefings before starting machinery	2M
2. Inspection	Emission leaks, Faulty components	3H	- Schedule regular maintenance checks - Use gas detection equipment to identify leaks - Replace or repair faulty components immediately - Record and report any anomalies found during inspection - Implement a tagging system for inspected machinery - Train personnel on identifying signs of component failure - Develop an inspection checklist for consistency - Authorise only qualified personnel to perform inspections - Ensure adequate lighting for proper inspection - Use thermal imaging for assessing heat emissions	2M
3. Starting Machinery	Unexpected startup emissions, Electrical faults	3H	- Install emission control systems like filters or scrubbers - Conduct air quality monitoring regularly - Implement lockout/tagout procedures before startup - Ensure machinery is serviced according to schedule - Assign only trained personnel for startup operations - Conduct visual checks prior to starting machinery - Use remote starting devices to avoid close exposure - Have emergency protocols in place for emission spikes	1L

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			- Regular safety audits to ensure compliance - Coordinate with environmental management for compliance	
4. Operating Machinery	Continuous exposure to emissions, Equipment malfunctions	3H	[redacted]	2M
5. Emergency Procedures	Delayed response to toxic releases, Inadequate evacuation routes	4A	[redacted]	2M
6. Maintenance	Excessive emissions during maintenance, Improper handling of toxic materials	3H	[redacted]	1L

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			[redacted]	
7. Shutdown	Residual emissions, Mechanical failure	2M	[redacted]	1L
8. Post-operation Review	Overlooking emiss[redacted] record[redacted] Incomplete incident [redacted]	2M	[redacted]	1L
9. Training and Awareness	Lack of awareness on emission hazards, Improper response to exposure	3H	[redacted]	1L

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			[redacted]	
10. Monitoring and Review	Inaccurate emission levels, Delayed response to changing conditions	3H	[redacted]	1L
11. Waste Management	Inappropriate disposal of toxic waste, Cross-contamination	3H	[redacted]	2M
12. Housekeeping	Accumulation of dust and emissions, Poor ventilation	2M	[redacted]	1L

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			[redacted]	
13. Legal Compliance	Non-compliance with emission regulations, Lack of updated legal knowledge	3H	[redacted]	1L
14. Communication and Leadership	Communication breakdown during operations, Lack of leadership in risk management	3H	[redacted]	1L
15. Continuous Improvement	Resistance to change, Complacency towards risks	2M	[redacted]	1L

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			[redacted]	
16. Contractor Management	Lack of contractor compliance, Unaware of site-specific hazards	3H	[redacted]	2M
17. Incident Response	Ineffective incident reporting, Delayed response actions	4A	[redacted]	2M
18. Personal Protective Equipment (PPE) Management	Incorrect use of PPE, Insufficient PPE supplies	3H	[redacted]	2M

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			[redacted]	
19. Equipment Maintenance and Calibration	Inaccurate equipment readings, Unscheduled breakdowns	3H	[redacted]	2M

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 2017
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