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

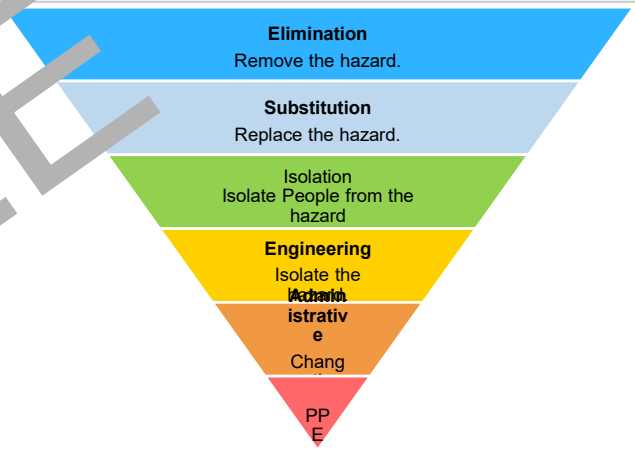
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

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. Governance, WHS Leadership and Legal Compliance	• Lack of clear WHS responsibilities and accountability at senior management level for recycling operations • Inadequate understanding of duties under WHS Act 2011 and WHS Regulation for plant, hazardous chemicals and high-risk work • Insufficient integration of WHS risk management into business planning and budgeting for recycling operations • Failure to monitor compliance with environmental licences and conditions that affect worker safety (e.g. dust, noise, stormwater controls) • Poor consultation and communication with workers and health and safety representatives about changes to recycling systems or equipment • Inadequate incident reporting and notifiable incident escalation processes • Failure to ensure officers exercise due diligence in relation to high-risk plant such as tyre shredders, cullet crushers and magnetic / eddy current separators	4A	• Establish a documented WHS governance framework that clearly allocates duties, responsibilities and reporting lines for all recycling operations, including cullet crushing, tyre shredding, plastic drum recycling and agricultural plastics recovery • Ensure officers are trained in due diligence obligations under the WHS Act 2011, with specific briefings on risks associated with fixed plant, traffic management, hazardous chemicals and confined spaces within the recycling facility • Implement a WHS legal register that includes all relevant Acts, Regulations, Codes of Practice and Australian Standards applicable to recycling plant, hazardous chemicals and dangerous goods storage • Embed WHS risk management into the corporate planning and budgeting process, including provision for plant guarding upgrades, dust and noise control, emergency response and training • Develop and maintain a formal worker consultation procedure, including regular WHS committee meetings and toolbox talks specifically focused on recycling system risks and proposed plant or process changes • Implement a documented procedure for notification, investigation and corrective action of incidents and near misses involving recycling plant (e.g. cullet crusher jams, tyre shredder blockages, magnetic and eddy current separator failures) • Undertake periodic independent WHS audits of recycling operations and track close-out of actions via a central risk register and action management system	3H
2. Plant and Equipment Lifecycle Management	• Unclear ownership of plant safety standards for cullet crushers, tyre shredders, magnetic separators, eddy current separators and plastic drum recycling equipment • Use of outdated or non-compliant machinery lacking appropriate guarding, emergency stops or interlocks • Inadequate pre-commissioning risk assessments for new or modified recycling plant • Poor change management when altering plant layout or adding new conveyors, shredders or sorting lines • Lack of standardised specifications for procurement of machinery with	4A	• Implement a formal plant lifecycle management procedure covering specification, procurement, installation, commissioning, modification, decommissioning and disposal of all recycling plant • Develop minimum safety specifications for cullet crushers, magnetic and eddy current separators, conveyors, bale breakers, tyre shredders and plastic drum recycling machinery referencing AS/NZS 4024 series and other relevant standards • Require formal pre-commissioning plant risk assessments for all new or significantly modified equipment, including verification of guarding, emergency stops, isolation points and access ways • Establish a documented management-of-change (MOC) process for any alteration to plant, control systems, guarding, guarding bypasses or production layout within recycling areas • Create a centralised plant register capturing design data, guarding requirements, inspection schedules, and residual risks for each item of recycling equipment • Ensure all second-hand or imported recycling plant is assessed against Australian standards and upgraded or retrofitted before use • Schedule periodic review (e.g. every 2–3 years or after an incident) of plant risk assessments to capture changes in use, condition or technology	2M

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	appropriate safety features and isolation points • Inadequate management of second-hand plant, particularly imported shredders and separators without Australian-compliant safeguards • Failure to maintain and update plant risk assessments over the life of the equipment			
3. Machine Guarding, Interlocks and Access Control	• Inadequate guarding on moving parts of cullet crushers, tyre shredders and conveyors leading to entanglement or amputation • Ability to bypass interlocks on access doors to crushers, shredders, magnetic and eddy current separators • Uncontrolled access to high-risk plant areas, including infeed hoppers and discharge points • Poor design of access platforms and stairs for maintenance on sorting lines and separation equipment • Guard removal for cl[illegible] blockages without formal proc[illegible]ure or supervision • Lack of verificati[illegible]and ins[illegible] regime for guards, i[illegible]s and emergency stopping devices • Non-standard emergency stop locations and inconsistent [illegible]ur coding or labelling	4A	• Dev[illegible]p and [illegible]force a[illegible]arding and i[illegible]erlock standard for all recycling plant, specifying fixed guards, interl[illegible]d guard[illegible]di[illegible]nce guarding and presence sensing where appropriate • Ensu[illegible] in[illegible]ed and [illegible]charge areas of cullet crushers, tyre shredders, magnetic separators, eddy current separa[illegible]s a[illegible] conve[illegible]s are physically guarded to prevent reach into nip points and rotating parts • Install r[illegible]oust, [illegible]mper-resistant interlocks on access hatches, inspection doors and maintenance covers, wi[illegible]ystems to d[illegible]ect and prevent bypassing • Standa[illegible]e emergency stop devices and locations across recycling lines, ensuring they are accessible, c[illegible]arly marked, tested and maintained in accordance with WHS Regulation and AS/NZS 4024 • In[illegible]roduce a formalised blockage and jam-clearing procedure requiring isolation, lockout/tagout and supervision before any guard is removed • Implement scheduled inspections of guarding and interlocks, using checklists and photographic standards to verify compliance and condition • Control access to high-risk plant zones with locked gates, swipe access or permit arrangements for authorised personnel only	2M
4. Isolation, Lockout and Stored Energy Management	• Lack of clearly identified isolation points for crushers, shredders, conveyors and separation equipment • Inadequate lockout/tagout systems for mechanical, electrical, hydraulic and pneumatic energy during maintenance and cleaning • Failure to manage stored energy in rotating components of tyre shredders and cullet crushers	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
	• Inconsistent isolation procedures across different recycling lines and shifts • Contractors performing maintenance on recycling plant without following site isolation processes • Inadequate verification of isolation prior to entry into hoppers, chutes or confined sections of plant • Poor signage and training around isolation devices and responsibilities		[redacted]	
5. Traffic, Mobile Plant and Pedestrian Interface Management	• Uncontrolled interaction between forklifts, loaders, trucks and workers in recycling receival, sorting and storage areas • Poorly designed traffic flow for delivery of tyres, agricultural plastics, plastic drums and glass cullet • Inadequate segregation between mobile plant and manual sorting zones on picking lines • Limited visibility due to stacked materials, bulk containers and stockpiles obstructing sight lines • Insufficient control for reversing vehicles near loading hoppers, shredders and crushers • Lack of competency verification for mobile plant operators working in congested recycling yards • Absence of a formal traffic management plan reviewed for changes in layout or volumes	4A	[redacted]	2M
6. Manual Handling, Ergonomics and Manual Sorting Systems	• Poorly designed manual sorting stations leading to repetitive strain, awkward postures and overreach • Unsystematic manual handling of heavy tyres, agricultural plastics, 110 litre drums and bulk containers • Inadequate conveyor height and speed control creating excessive reaching and twisting during manual picking	3H	[redacted]	2M

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	• Lack of mechanical aids for handling large plastic drums and bulk containers in recycling areas • Insufficient job rotation and task variation for workers on manual sorting of recyclables • Poor design of waste chutes and collection bins requiring forceful movements to clear jams		[redacted]	
7. Hazardous Substances, Contaminants and Exposure Control	• Exposure to glass dust from cullet crushing operations without adequate engineering controls • Inhalation of tyre dust, rubber particulates and fumes from tyre shredding and handling • Release of hazardous residues from plastic drum recycling (e.g. chemical residues, pesticides from agricultural plastics) • Inadequate classification, labelling a segregation of contaminated drums an agricultural plastics prior to processing • Insufficient ventilatio d extraction systems in enclose orting and shredding areas • Lack of a systema dous chemicals register and safety data s et management for substances used cleaning, maintenance or sing • Inadequate decontamination procedures for plant and equipment handling hazardous residues	4	[redacted]	2M
8. Fire, Explosion and Emergency Preparedness	• Fire in stockpiles of tyres, agricultural plastics, plastic drums or mixed recyclables due to poor storage and housekeeping • Ignition of flammable residues during plastic drum recycling or cutting operations • Overheating of bearings, conveyors or shredders leading to ignition within enclosed plant	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
	• Inadequate detection and suppression systems in areas with combustible dust from cullet crushing or plastic processing • Poorly planned emergency evacuation routes through congested recycling areas and stockpiles • Lack of site-specific emergency response plans for tyre fires, chemical spills and plant fires • Insufficient coordination with local emergency services regarding unique recycling hazards		[redacted]	
9. Noise, Vibration and Environmental Nuisance Management	• Excessive noise from cullet crushing, tyre shredding, conveyors and separation equipment leading to hearing damage • Inadequate noise assessment and control planning across recycling operations • Vibration exposure for operators working near shredders and crushers f extended periods • Noise and dust creati community complaints and pre ure to compromise safe operating pra ces • Poor maintenance leading elevated noise levels from worn components		[redacted]	2M
10. Training, Competency and Supervision Systems	• Operators of cullet crush tyre shredders, magnetic separators and eddy current separators not formally assessed as competent • Inadequate induction for new workers and contractors regarding recycling-specific hazards and controls • Reliance on informal on-the-job training with no structured program or verification of skills • Insufficient supervision of high-risk tasks such as jam clearing, maintenance and contaminated drum handling	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
	• Lack of refresher training on critical procedures including lockout/tagout, traffic management and emergency response • Training materials not kept current with changes in plant, layout or procedures		[redacted]	
11. Contractor, Visitor and Supplier Management	• Contractors performing maintenance or installation on recycling plant without adequate knowledge of site-specific WHS risks • Suppliers delivering tyres, drums, cullet or agricultural plastics without following site traffic and unloading procedures • Inadequate prequalification of contractors who work on high-risk plant such as shredders and crushers • Visitors entering operational areas without appropriate induction or supervision • Poor communication of isolation, permit and emergency procedures to third parties	3H	[redacted]	2M
12. Process Control, Quality and Contamination Management	• Uncontrolled vari[redacted]on in f[redacted]stock (e.g. mixed tyres, unknown drum contents, contaminated agricultural plastics) leading to unexpected ch[redacted]ical and physical hazards • Poor segregation of waste streams causing incompatible materials to enter crushing or shredding systems • Lack of formal acceptance criteria and inspection for incoming recyclables • Inadequate procedures for identifying and isolating non-conforming or hazardous loads • Pressure to maintain throughput leading to bypassing of inspection and sorting controls	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
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13. Maintenance, Inspection and Reliability Management	• Breakdown of cullet crushers, shredders and separators due to inadequate preventative maintenance leading to sudden failures and safety risks • Deferred maintenance on guarding, emergency stops and interlocks as production is prioritised • Lack of formal inspection schedules for conveyors, cranes, hoists and lifting attachments used in recycling operations • Use of defective equipment for handling tyres, drums and bulk containers • Poor communication between operations and maintenance about observed defects and near misses	3H	[redacted]	2M
14. Fatigue, Rostering and Psychosocial Risk Management	• Extended shifts and night operations in recycling facilities leading to fatigue-related errors, especially around high-risk plant • High cognitive load for operators monitoring multiple conveyors, sorters and separation systems • Job stress from production targets discouraging safe behaviours and thorough inspections • Inadequate management of lone work in remote stockpile areas or during after-hours maintenance • Limited systems to identify and manage psychosocial risks such as bullying, harassment or exposure to traumatic incidents (e.g. severe injuries on plant)	3H	[redacted]	1L
15. Emergency Response, First Aid and Incident Management	• Delayed response to injuries around shredders, crushers and conveyors due to poor communication systems • Inadequate first aid coverage during all operating hours of the recycling facility	3H	[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
	• Lack of scenario-based emergency drills for entrapment in plant, chemical exposure and fire in tyre or plastic stockpiles • Poor coordination of incident control, investigation and return-to-work processes • Incomplete learning from past incidents and near misses leading to recurrence of similar events		[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