

Crop Harvesting Farming Machinery and Tractor Operations

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. WHS Governance, Duties and Farm Safety Leadership	<ul style="list-style-type: none"> Lack of documented WHS policy and safety objectives for cropping and machinery operations Unclear allocation of WHS duties and due diligence responsibilities under WHS Act 2011 Inadequate consultation mechanisms with workers, contractors and labour hire employees Failure to integrate WHS obligations into business planning for crop rotation, harvesting and winery operations Insufficient monitoring of compliance with Codes of Practice and relevant Australian Standards Poor safety culture leading to normalisation of high-risk shortcuts during harvest peaks 	4A	<ul style="list-style-type: none"> Establish and maintain a documented WHS management system aligned with WHS Act 2011 and relevant Codes of Practice, specifically addressing crop harvesting and tractor operations Define and document WHS roles, responsibilities and accountabilities for PCBUs, officers, managers, supervisors, farm hands and contractors Implement a formal WHS policy endorsed by senior management, communicated to all workers including seasonal and migrant labour Set measurable WHS KPIs (e.g. incident rates, audit findings, corrective action closure times) linked to management performance reviews Establish structured worker consultation arrangements such as WHS committees, HSRs and regular toolbox meetings focused on machinery and harvesting risks Conduct periodic legal compliance reviews to verify alignment with WHS legislation, Regulations and applicable Australian Standards for agricultural machinery Implement a safety leadership program for managers and supervisors emphasising due diligence, visible safety leadership and safety culture principles Include WHS performance and incidents as standing items in management meetings and farm production planning sessions 	3H
2. Machinery Selection, Design, Guarding and Procurement	<ul style="list-style-type: none"> Purchase of harvesting and tillage equipment without adequate safety features or guarding Lack of standardisation across tractors, combine harvesters, sugar cane harvesters, windrowers and balers leading to increasing operator error Inadequate guarding of PTO shafts, cutter bars, mulchers, Spagnolo sweepers and orchard equipment Non-compliance with relevant Australian Standards or manufacturer safety specifications Absence of rollover protective structures (ROPS) and falling object protective structures (FOPS) on suitable tractors and machinery Inadequate operator visibility from cabs during loading/unloading hay bales and stacking activities 	4A	<ul style="list-style-type: none"> Implement a formal procurement policy requiring machinery to comply with relevant Australian Standards, WHS Regulations and manufacturer safety specifications Standardise preferred makes and models of tractors, combine harvesters, balers, tillage and cultivation equipment to reduce variability in controls and interfaces Specify mandatory safety features for new plant, including ROPS, FOPS where required, compliant guarding for PTOs, cutter bars, augers and moving parts, emergency stop systems and interlocks Engage competent persons to review safety specifications prior to purchase of high-risk machinery such as sugar cane harvesters and combine harvesters Require suppliers to provide documented risk assessments, instructions, training materials and maintenance schedules for all new machinery Ensure cab design and mirror/camera systems provide adequate visibility for loading, unloading and stacking hay and for orchard and winery operations Implement a pre-commissioning verification and sign-off process to confirm safety controls (guards, warning labels, isolation points) are correctly installed and functional before use Maintain a plant register capturing key safety features, limitations and inspection requirements for each item of machinery 	2M

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3. Plant and Machinery Installation, Modification and Commissioning	<ul style="list-style-type: none"> Uncontrolled modification of tractors, harvesters, mulchers, shakers and attachments compromising safety systems Incorrect fitting of implements (ploughs, tillage equipment, round balers, seed sowers, manure spreaders) leading to mechanical failure or loss of control Lack of formal commissioning and verification when new machinery or technology is introduced Plant not compatible with existing tractors, hydraulic systems or PTO speeds Failure to update safety documentation and SOPs after modifications or new installations 	3H	<ul style="list-style-type: none"> Implement a formal plant change management procedure for installation, modification or relocation of machinery and attachments Require engineering review and sign-off by a competent person for any structural or functional modification to tractors, harvesters, balers or mounted implements Develop and use standardised procedures for attaching and detaching implements, including verification of correct PTO, hydraulic and electrical connections Ensure all plant commissioning includes functional testing of safety systems (guards, interlocks, emergency stops, isolation points) before operation Maintain up-to-date plant and attachment compatibility matrices (e.g. horsepower, PTO speed, hydraulic flow) and prohibit non-approved combinations Update risk assessments, SOPs and training materials whenever machinery configurations or layouts are changed Retain records of modifications, engineering approvals and commissioning test results within the plant register 	2M
4. Preventive Maintenance, Inspection and Repair Systems	<ul style="list-style-type: none"> Inadequate preventive maintenance scheduling for tractors, combine harvesters, sugar cane harvesters and balers Failure of braking, steering, hydraulics or PTOs due to poor maintenance controls Blockages and uncontrolled downfalls in grain harvesting, mulching and manure spreading leading to dangerous agricultural clearing practices Inaccurate or missing maintenance records for critical safety components and guards Repairs undertaken by unqualified personnel using incorrect parts Insufficient pre-start inspection systems for machinery used in crop harvesting, tillage, sowing and underground cultivation 	4A	<p>[REDACTED]</p>	2M
5. Operator Competency, Licensing and Training Systems	<ul style="list-style-type: none"> Operators using tractors, combine harvesters, sugar cane harvesters, 	4A		2M

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	<p>windrowers and balers without adequate competency</p> <ul style="list-style-type: none"> Seasonal, migrant and labour hire workers not inducted into farm-specific machinery hazards and emergency procedures No verification of high risk work licences for relevant tasks such as telehandler or forklift use during hay loading and stacking Inconsistent training for specialised equipment (olive shakers, Spagnolo sweepers, orchard cutter bars, winery machinery) Lack of refresher training, especially after near misses and incidents Inadequate supervision of new or young workers engaged in soil cultivation, ploughing and seed sowing operations 		[REDACTED]	
6. Safe Work Procedures, SWMS and Work Planning	<ul style="list-style-type: none"> Absence of documented safe work procedures for high-risk machinery operations and associated tasks Outdated or generic SWMS that do not reflect actual farm conditions or specific machinery (e.g. sugar cane harvesters, grain harvester) Workers unaware of existing procedures for tasks such as loading/unloading hay bales, stacking hay or underground cultivation Inadequate integration of crop rotation planning with traffic management, equipment selection and resource allocation Failure to plan for peak season workloads leading to rushed and unsafe work practices 	3H	[REDACTED]	1L

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7. Traffic Management, Mobile Plant Interaction and Site Layout	<ul style="list-style-type: none"> • Uncontrolled interaction between tractors, harvesters, trucks and pedestrians in fields, laneways, loading zones and winery yards • Poorly planned grain loading and hay stacking areas leading to congestion and blind spots • No defined travel routes for heavy machinery between crop zones, storage areas and winery facilities • Reversing incidents due to lack of spotters or visual aids when loading/unloading bales or grain • Inadequate separation of light vehicles from harvesting and tillage equipment • Machinery movement through orchards and vineyards without clear exclusion zones for ground workers and pickers 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M
8. Fatigue, Workload and Seasonal Peak Management	<ul style="list-style-type: none"> • Extended shifts and consecutive work days during peak grain and sugar cane harvesting periods • High cognitive load and monotony for operators of large harvesters, tractors and windrowers • Insufficient planning for staff levels during crop sowing, irrigation and baling seasons • Pressure to complete harvesting before weather events leading to rushing and inadequate breaks • Ineffective fatigue reporting culture and lack of guidance for supervisors on managing fatigue risks 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M
9. Hazardous Energies, Isolation and Lock-Out/Tag-Out	<ul style="list-style-type: none"> • Uncontrolled movement of machinery parts during maintenance, cleaning or clearing blockages in harvesters, balers, mulchers and spreaders • Failure to isolate PTOs, hydraulics and electrical systems before access to danger zones 	4A	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> Lack of standardised lock-out/tag-out procedures and devices across the farm Stored energy hazards in hydraulic accumulators, belts, springs and elevated loads Inadequate training on isolation procedures for contracted maintenance personnel 		[REDACTED]	
10. Chemical, Dust, Noise and Environmental Exposure Management	<ul style="list-style-type: none"> Exposure to dust, chaff and bio-aerosols during harvesting, tillage, manure spreading and underground cultivation High noise levels from tractors, harvesters, mulchers, balers, sweepers and winery processing equipment Diesel exhaust exposure in confined or poorly ventilated areas such as sheds or winery buildings Contact with agrochemicals, fertiliser and manure during spreading and general farm work Inadequate management of winery and orchard spray in proximity to machinery operators 	3H	[REDACTED]	1L
11. Remote and Isolated Work, Communications and Emergency Response	<ul style="list-style-type: none"> Operators working alone in remote paddocks during ploughing, seed sowing, harvesting and manure spreading Limited mobile phone coverage in cropping and vineyard areas Delayed emergency response to rollovers, entanglements or medical events Lack of tested rescue procedures for entrapment in machinery or grain handling equipment Inadequate communication protocols between field operators, transport drivers and winery staff 	4A	[REDACTED]	2M

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			[REDACTED]	
12. Contractor, Labour Hire and Visitor Management	<ul style="list-style-type: none"> Contractors operating plant (e.g. harvesting crews, baling contractors, trucking companies) outside farm WHS controls Labour hire workers unfamiliar with property-specific risks and machinery systems Visitors (agronomists, buyers, winery tour groups) entering operational cropping, hay stacking or winery processing areas Inconsistent verification of contractor qualifications, insurances and SWMS Poor coordination between PCBU duties leading to gaps in risk control during shared operations 	3H	[REDACTED]	1L
13. Manual Handling, Ergonomics and Access Systems	<ul style="list-style-type: none"> Manual handling of heavy or awkward items such as machinery components, hay bales and tools Poorly designed access to machinery cabs, hoppers and maintenance points on harvesters, bales and sp... Prolonged seated postures and whole-body vibration for tractor and harvester operators Slips, trips and falls when mounting/dismounting machinery or working on uneven, muddy or rutted ground Inadequate lighting on access ways and work platforms used for inspection and cleaning 	3H	[REDACTED]	1L
14. Farm Infrastructure, Ground Conditions and Environmental Planning	<ul style="list-style-type: none"> Tractor and machinery rollovers due to unstable ground, drains, ditches and uneven paddocks Inadequate assessment of slopes for safe machinery operation during 	4A	[REDACTED]	2M

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	ploughing, sowing, harvesting and spraying • Uncontrolled interaction with powerlines, irrigation infrastructure and underground services • Poorly maintained farm roads and laneways used by heavy vehicles transporting grain, hay and grapes • Crop rotation and soil cultivation plans not accounting for erosion, bogging risk and access requirements for heavy machinery		[REDACTED]	
15. Incident Reporting, Investigation and Continuous Improvement	• Under-reporting of incidents, near misses and plant defects relating to machinery and harvesting activities • Failure to identify root causes of machinery-related incidents such as rollovers, fires, entanglements and collisions • Lack of systematic learning from incidents across cropping, hay, orchard and winery operations • Delayed implementation of corrective actions allowing repeat events • Data not used to inform risk assessments, training and maintenance programs	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.