

**Earthmoving Plant Maintenance And Service**

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			<b>Elimination</b> Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	<b>Substitution</b> 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.	<b>Engineering</b> 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:	
<b>4A</b>	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.
<b>3H</b>	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
<b>2M</b>	Ensure all nominated controls are in place and effective. Proceed with caution; monitor conditions.
<b>1L</b>	Proceed, following standard operating procedures. Monitor and keep records.

  

Consequence Scale:			
Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
<b>Catastrophic</b>	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
<b>Major</b>	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
<b>Moderate</b>	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
<b>Minor</b>	First-aid only, no lost time	negligible delay	Isolated non-conformance
<b>Insignificant</b>	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 Legal Compliance	<ul style="list-style-type: none"> <li>Failure of PCBU and officers to understand and discharge due diligence duties under WHS Act 2011 and WHS Regulations</li> <li>Absence of a documented WHS management system specific to earthmoving plant maintenance and service activities</li> <li>Inadequate consultation with workers, HSRs and contractors undertaking earthmoving equipment maintenance</li> <li>No formal process for monitoring changes to legislation, Australian Standards and manufacturer requirements</li> <li>Lack of documented safety objectives, KPIs and performance indicators for plant maintenance risk control</li> </ul>	High	<ul style="list-style-type: none"> <li>Develop and implement a documented WHS Management System aligned to WHS Act 2011, WHS Regulations and relevant Australian Standards (e.g. AS 2550 series, AS 4024 series, AS 1657, AS/NZS 4801 or ISO 45001)</li> <li>Define WHS roles, responsibilities and accountability for officers, managers, supervisors, mechanics, fitters and contractors involved in earthmoving plant maintenance and service</li> <li>Establish a formal legal compliance register covering WHS legislation, codes of practice (e.g. Managing Risks of Plant in the Workplace), relevant guidance materials and manufacturer requirements for earthmoving machinery</li> <li>Implement a scheduled WHS governance review (e.g. quarterly) by senior management to review incident data, audits, risk assessments and compliance status for earthmoving plant</li> <li>Ensure officers undertake WHS due diligence training, including specific modules on high-risk plant and maintenance systems</li> <li>Implement structured consultation processes (e.g. WHS committee, toolbox meetings, pre-start meetings) that specifically address maintenance and workshop risks for earthmoving equipment</li> <li>Maintain documented WHS policies and procedures for plant risk management, isolation, maintenance planning, contract management and change management</li> <li>Conduct periodic external or internal compliance audits against the WHS Management System and rectify identified gaps with action plans and timeframes</li> </ul>	Medium
2. Plant Procurement, Design and Engineering Controls	<ul style="list-style-type: none"> <li>Procurement of earthmoving plant that is not inherently safe or suited to the intended work environment and maintenance regime</li> <li>Lack of engineering controls for isolation, guarding, access, safe maintenance points and lifting points on earthmoving equipment</li> <li>Incomplete or missing manufacturer documentation (manuals, schematics, service schedules) impacting safe maintenance planning</li> <li>Failure to consider whole-of-life maintenance requirements, including access for inspection, service and component replacement</li> <li>Purchase or use of non-compliant attachments, aftermarket components or modifications that compromise safety during maintenance</li> </ul>	High	<ul style="list-style-type: none"> <li>Implement a plant procurement procedure requiring WHS review and sign-off before purchasing or hiring earthmoving equipment or attachments</li> <li>Specify WHS and maintainability criteria in procurement documents, including compliant access systems, isolation points, rated lifting points, guarding and lockable controls</li> <li>Require suppliers to provide complete and current operator and service manuals, risk assessments, maintenance schedules and compliance certificates as a condition of supply</li> <li>Conduct pre-delivery inspections and commissioning checks against a standardised checklist that includes maintenance and service access risks</li> <li>Ensure the design and layout of earthmoving plant includes permanent access systems (stairs, platforms, handrails) compliant with AS 1657 where reasonably practicable</li> <li>Prohibit unauthorised modifications; establish an engineering change process with risk assessment, competent person sign-off and updated documentation before alterations to earthmoving plant</li> <li>Use only attachments and parts verified as compatible and compliant with manufacturer requirements and relevant standards for earthmoving machinery</li> <li>Maintain a plant register that records design features, rated capacities, engineering controls and any approved modifications affecting maintenance</li> </ul>	Medium

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
3. Plant Registration, Inventory and Configuration Management	<ul style="list-style-type: none"> <li>Inaccurate or incomplete register of earthmoving equipment leading to uncontrolled risks and missed maintenance</li> <li>Uncertainty regarding which items of plant require registration or notification under WHS regulations</li> <li>Uncontrolled configuration changes, retrofits or software updates affecting safety-critical systems (e.g. load management, stability, collision avoidance)</li> <li>Inability to track plant location, utilisation and status (operational, under repair, out of service) across sites</li> <li>Lack of traceability for critical safety components and maintenance history</li> </ul>	High	<ul style="list-style-type: none"> <li>Maintain a comprehensive plant register for all earthmoving equipment, including make, model, serial number, location, owner, registration status and maintenance responsibilities</li> <li>Identify plant that requires registration or notification and implement processes to ensure timely application, renewal and display of registration where applicable</li> <li>Implement configuration management procedures for earthmoving plant, documenting any changes to safety systems, control software, attachments or structural components</li> <li>Use a centralised asset management system to record plant status (in service, out of service, under maintenance) and location in real time</li> <li>Record maintenance history, inspection findings, defects and rectification details for each item of earthmoving plant in the asset management system</li> <li>Establish rules that earthmoving plant cannot be returned to service until configuration and maintenance records are updated and authorised by a competent person</li> <li>Conduct periodic reconciliation between physical plant on site and the plant register to verify accuracy</li> </ul>	Medium
4. Maintenance Planning, Scheduling and Work Control	<ul style="list-style-type: none"> <li>Reactive or ad-hoc maintenance resulting in rushed work, inadequate risk assessment and incomplete controls</li> <li>Missed inspections and services due to poor scheduling or lack of visibility of upcoming maintenance for earthmoving equipment</li> <li>Work being performed outside approved scope or without appropriate maintenance procedures and permits</li> <li>Inadequate prioritisation of defects and safety-critical repairs, resulting in unsafe plant remaining in operation</li> <li>Inconsistent communication of planned shutdowns and service windows between operations and maintenance teams</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium
5. Workshop and Site Layout, Traffic and Segregation	<ul style="list-style-type: none"> <li>Poor workshop design leading to interaction between mobile earthmoving plant, pedestrians and other vehicles</li> </ul>	High		Low

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
	<ul style="list-style-type: none"> <li>Inadequate segregation of maintenance areas from operational traffic routes and loading zones</li> <li>Insufficient space, lighting and access around earthmoving equipment being serviced, increasing exposure to crushing and struck-by risks</li> <li>Lack of clearly defined parking, wash-down, service bays and laydown areas for earthmoving machinery</li> <li>Uncontrolled entry by unauthorised persons into maintenance and service zones</li> </ul>		[REDACTED]	
6. Isolation, Lockout-Tagout and Energy Control Systems	<ul style="list-style-type: none"> <li>Failure to properly isolate energy sources (mechanical, hydraulic, pneumatic, electrical, kinetic, stored energy) during earthmoving maintenance</li> <li>Inconsistent or informal lockout-tagout practices between shifts, supervisors and contractors</li> <li>Lack of clearly identified isolation points and procedures on different models of earthmoving equipment</li> <li>Re-energisation or movement of plant while people are still working on or under the equipment</li> <li>Inadequate verification and testing of isolation prior to commencing service work</li> </ul>	High	[REDACTED]	Medium

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
7. Competency, Training and Authorisation	<ul style="list-style-type: none"> <li>Maintenance personnel lacking formal competency for specific earthmoving plant systems (hydraulics, electrical, braking, stability control)</li> <li>Operators performing minor service tasks without adequate training or supervision</li> <li>Over-reliance on informal on-the-job learning instead of competency-based training and assessment</li> <li>No clear authorisation process defining what tasks different roles are permitted to perform on earthmoving equipment</li> <li>Training not updated to reflect new plant, technology, procedures or lessons learned from incidents</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium
8. Documentation, Procedures and Work Instructions	<ul style="list-style-type: none"> <li>Absence of standardised procedures for key earthmoving plant maintenance activities</li> <li>Use of outdated, incomplete or non-approved work instructions in the workshop or field</li> <li>Overly complex or generic procedures that are not practical for technicians to follow</li> <li>Inconsistent documentation between different sites or depots, creating confusion and varying standards</li> <li>Critical safety information from OEM manuals not incorporated into local procedures</li> </ul>	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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
			[Redacted]	
9. Contractor and Supplier Management	<ul style="list-style-type: none"> <li>• Third-party mechanics or service providers working on earthmoving equipment without alignment to site WHS standards</li> <li>• Lack of clarity over responsibilities for plant safety, isolation, supervision and incident reporting when contractors are engaged</li> <li>• Inadequate verification of contractor competency, insurances and WHS systems prior to engagement</li> <li>• Poor communication of site-specific hazards, traffic rules and workshop procedures to visiting earthmoving plant service providers</li> <li>• Subcontracting chains leading to loss of control over WHS performance</li> </ul>	High	[Redacted]	Medium
10. Inspection, Pre-Use Checks and Condition Monitoring Systems	<ul style="list-style-type: none"> <li>• Systemic failure to identify deteriorating condition of earthmoving equipment prior to major faults or incidents</li> <li>• Inconsistent or undocumented pre-start inspections by operators and maintenance staff</li> <li>• Reliance solely on time-based servicing without considering usage, environment or condition data</li> <li>• Defects identified but not recorded, prioritised or rectified in a timely manner</li> </ul>	High	[Redacted]	Medium

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
	<ul style="list-style-type: none"> <li>Lack of feedback loop from inspection findings into maintenance planning and risk controls</li> </ul>		[REDACTED]	
11. Workshop Plant, Tools and Lifting Equipment Management	<ul style="list-style-type: none"> <li>Use of unsuitable or uncertified lifting equipment, jacks, stands or slings when working on earthmoving machinery</li> <li>Workshop plant (e.g. grinders, welders, pressure cleaners, compressors) not maintained, guarded or inspected in line with WHS requirements</li> <li>Lack of systems to ensure only calibrated and tested equipment is used for safety-critical tasks (e.g. torque tool test instruments)</li> <li>Poor storage and identification of speciality tools and attachments for earth moving equipment maintenance</li> <li>Uncontrolled introduction of new tools or workshop equipment without assessment</li> </ul>	High	[REDACTED]	Medium
12. Personal Protective Equipment and Welfare Arrangements	<ul style="list-style-type: none"> <li>Reliance on PPE as the primary control instead of higher-order controls for earthmoving plant maintenance risks</li> <li>Inadequate specification, issue and management of PPE for typical workshop and field maintenance hazards</li> <li>Failure to provide facilities and welfare arrangements (e.g. washing, change rooms) to manage contaminants such as oils, diesel, coolants and silica dust</li> </ul>	Medium	[REDACTED]	Low

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
	<ul style="list-style-type: none"> <li>Poor housekeeping and storage of PPE leading to non-use or ineffective protection</li> <li>Inadequate hearing, eye and respiratory protection for activities such as grinding, cutting and pressure cleaning of earthmoving equipment</li> </ul>		[REDACTED]	
13. Incident, Hazard and Near-Miss Reporting and Investigation	<ul style="list-style-type: none"> <li>Under-reporting of incidents, hazards and near misses related to earthmoving plant maintenance and service</li> <li>Ineffective investigation processes that fail to identify root causes and systemic issues</li> <li>Lack of timely corrective actions, leading to repeat incidents in the workshop or during field service</li> <li>Poor communication of lessons learned across team and sites</li> <li>No linkage between incident findings and updates to risk assessments, procedures and training</li> </ul>	High	[REDACTED]	Medium
14. Emergency Preparedness and Response for Maintenance Activities	<ul style="list-style-type: none"> <li>Lack of clear emergency response arrangements for incidents involving earthmoving plant in the workshop or field</li> <li>Inadequate rescue plans for working under raised plant, in pits, on machines or in confined spaces associated with maintenance</li> </ul>	High	[REDACTED]	Medium

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
	<ul style="list-style-type: none"> <li>• Insufficient first aid coverage, equipment and training for typical maintenance injuries</li> <li>• Poor communication systems for field service personnel working alone or in remote locations</li> <li>• Emergency drills not reflecting realistic earthmoving plant maintenance scenarios</li> </ul>		[REDACTED]	
15. Monitoring, Auditing and Continuous Improvement	<ul style="list-style-type: none"> <li>• Failure to verify that WHS controls for earthmoving plant maintenance and service are implemented and effective</li> <li>• WHS performance indicators focus solely on lag measures (injuries) rather than leading indicators (inspections, training, compliance)</li> <li>• No structured review of the WHS risk profile as plant, technology and work methods change</li> <li>• Audit findings not closed out or tracked to completion</li> <li>• Complacency developing over time, leading to erosion of safety standards in workshops and maintenance practices</li> </ul>	Medium	[REDACTED]	Low

**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.