

**Manual Excavation and Hand Digging**

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. WHS Governance, Roles and Legal Compliance	<ul style="list-style-type: none"> <li>Lack of clear WHS responsibilities for manual excavation and hand digging activities</li> <li>Inadequate understanding of WHS Act 2011 and WHS Regulations relating to excavation work, public safety and underground services</li> <li>Failure to identify the Person Conducting a Business or Undertaking (PCBU) and principal contractor duties for excavation near public areas</li> <li>No process to ensure duty of care to workers and members of the public adjacent to work zones (e.g. pedestrians on footpaths)</li> <li>Inadequate consultation with Health and Safety Representatives (HSRs) and workers about excavation risks</li> <li>Poor integration of excavation risk management into the organisation's WHS management system and policies</li> <li>Failure to ensure officers exercise due diligence in relation to higher-risk excavation and service location activities</li> </ul>	4A	<ul style="list-style-type: none"> <li>Develop and implement a documented WHS Policy and Excavation Risk Management Standard aligned with WHS Act 2011 and WHS Regulations</li> <li>Clearly define WHS roles, responsibilities and accountabilitys for PCBUs, officers, supervisors, workers and subcontractors involved in manual excavation</li> <li>Establish a governance framework that requires formal review and approval of excavation works near public footpaths and underground services</li> <li>Ensure officers undertake due diligence activities such as regular WHS reporting, site visits, and verification of excavation controls and resources</li> <li>Embed consultation procedures requiring engagement with workers and HSRs during the planning phase of all manual excavation works</li> <li>Maintain a legal register capturing relevant WHS legislation, Codes of Practice (e.g. Excavation Work, Construction Work) and Australian Standards, and review it annually</li> <li>Integrate excavation and hand digging risks into the organisation-wide WHS risk register with regular review dates and assigned risk owners</li> </ul>	3H
2. Project and Work Planning for Manual Excavation	<ul style="list-style-type: none"> <li>Manual excavation and hand digging activities commenced without a formal risk assessment and written planning</li> <li>Inadequate scoping of work adjacent to public footpaths and in high pedestrian traffic areas</li> <li>Failure to identify whether the work triggers construction project requirements (e.g. principal contractor, WHS management plan)</li> <li>Poor sequencing of tasks leading to overlapping activities and increased exposure to struck-by, trip and service contact risks</li> <li>Lack of planning for reduced visibility periods (e.g. early mornings, evenings, poor weather) near public access routes</li> </ul>	4A	<ul style="list-style-type: none"> <li>Implement a formal project planning process requiring a documented WHS Risk Assessment for all manual excavation and hand digging tasks</li> <li>Mandate that works near public footpaths, road reserves and high pedestrian traffic zones undergo a higher-level planning review and sign-off</li> <li>Require identification of construction project status and preparation of a WHS Management Plan where thresholds under WHS Regulations are met</li> <li>Establish planning procedures that define task sequencing to minimise simultaneous high-risk activities in confined excavation zones</li> <li>Include assessment of lighting conditions, pedestrian flows and traffic interaction in all planning documents for work adjacent to public areas</li> <li>Introduce mandatory pre-start coordination meetings (e.g. daily pre-starts) to communicate scope, interfaces and key risks</li> <li>Develop contingency and change management procedures for discovery of unknown services, unstable ground or changed site conditions</li> </ul>	2M

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	<ul style="list-style-type: none"> <li>No requirement for pre-start coordination meetings between supervisors, workers and subcontractors</li> <li>Insufficient contingency planning for unexpected ground conditions or uncharted underground services</li> </ul>			
3. Underground Service Location and Permit-to-Dig Systems	<ul style="list-style-type: none"> <li>Manual excavation commenced without up-to-date dial-before-you-dig (DBYD / Before You Dig) service plans</li> <li>Reliance on old or incomplete asset drawings for service locations near footpaths and verges</li> <li>Absence of a formal permit-to-dig system for hand excavation near underground services</li> <li>Inadequate process for positive identification (potholing) of live services before bulk hand excavation</li> <li>No defined clearance rules or risk criteria for different service types (gas, electricity, water, communications)</li> <li>Poor communication of service location information to the work crew and subcontractors</li> <li>Failure to manage change when new services are identified during excavation</li> </ul>	4A	<ul style="list-style-type: none"> <li>Implement a formal Service Location Procedure requiring current DBYD/Before You Dig documentation prior to any excavation or hand digging</li> <li>Introduce a Permit-to-Dig system for all excavation within predefined distances of known or possible services, with competent authorising personnel</li> <li>Require non-destructive verification methods (e.g. vacuum excavation, hand potholing under supervision) to expose and confirm services before further excavation</li> <li>Develop documented clearance requirements and no-go zones for each service type, integrated into permits and site plans</li> <li>Ensure all service locations are transferred to clear site drawings and communicated during pre-start briefing and toolbox talks</li> <li>Maintain a register of all service strikes, near misses and lessons learned, and use these to update the Service Location Procedure</li> <li>Establish a change management process requiring permit revision and supervisor review when uncharted or mislocated services are discovered</li> </ul>	2M
4. Design, Engineering and Excavation Method Selection	<ul style="list-style-type: none"> <li>Failure to consider alternative construction or design options that reduce the need for manual excavation next to public footpaths</li> <li>Inappropriate selection of excavation method near live services (e.g. excessive mechanical excavation where hand digging is required)</li> <li>No systematic engineering review of excavation depth, width and support requirements in planning stages</li> <li>Inadequate consideration of existing structures (footpaths, kerbs, retaining walls, adjacent buildings) when planning excavation method</li> </ul>	3H	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	2M

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	<ul style="list-style-type: none"> <li>Lack of formal criteria for choosing hand excavation over plant, or combining methods in a safe sequence</li> <li>Insufficient engineering assessment of potential ground collapse or undermining of footpaths and public infrastructure</li> </ul>		[REDACTED]	
5. Site Access, Public Interface and Pedestrian Management	<ul style="list-style-type: none"> <li>Uncontrolled interaction between workers, excavation activities and members of the public using adjacent footpaths</li> <li>Insufficient separation between manual excavation zones and pedestrian routes</li> <li>No formal pedestrian management plan for high-traffic footpaths or shared paths</li> <li>Inadequate temporary traffic management for areas where excavations are near kerbs or roadways</li> <li>Poorly planned site access points leading to pedestrians entering work zones unintentionally</li> <li>Lack of safe alternate pedestrian routes or clear wayfinding around excavations</li> <li>Insufficient measures to protect vulnerable road users such as children, elderly, or mobility-impaired pedestrians</li> </ul>	4A	[REDACTED]	2M
6. Excavation Support, Barricading and Edge Protection Systems	<ul style="list-style-type: none"> <li>Inadequate systemic requirement for trench shoring, benching or battering for hand-excavated trenches</li> <li>Lack of standardised excavation edge protection adjacent to public footpaths and pedestrian areas</li> <li>Failure to ensure consistent use of physical barriers and covers over open holes and pits after hours</li> <li>Use of ad hoc barricading solutions that do not meet Australian Standards or authority requirements</li> </ul>	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> <li>No formal inspection regime for shoring, trench boxes and structural supports used with hand digging</li> <li>Inadequate control over unauthorised access into excavations by workers or the public</li> </ul>		[REDACTED]	
7. Ground Conditions, Environmental and Weather Management	<ul style="list-style-type: none"> <li>Lack of systematic assessment of soil type, stability and moisture content before commencing manual excavation</li> <li>Failure to manage changes in ground conditions due to rain, flooding, or nearby water services</li> <li>Inadequate systems to respond to contamination, asbestos in soil or unexpected hazardous materials</li> <li>No formal process to monitor and control water ingress into hand-excavated areas</li> <li>Poor planning for excavation near trees, roots and existing structures leading to instability or damage</li> <li>Inadequate allowance for heat, UV exposure, or cold/wet conditions affecting workers during sustained hand digging tasks</li> </ul>	3H	[REDACTED]	2M
8. Worker Competency, Training and Authorisation	<ul style="list-style-type: none"> <li>Workers performing manual excavation near live services without appropriate competency or verification of skills</li> <li>Supervisors lacking training in excavation risk management and service location principles</li> <li>No formal authorisation system for personnel allowed to work within defined distances of underground utilities</li> <li>Inadequate induction covering project-specific excavation hazards, public interface risks and emergency procedures</li> <li>Failure to ensure workers understand plans, permits and service drawings due to language, literacy or experience barriers</li> </ul>	4A	[REDACTED]	2M

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	<ul style="list-style-type: none"> <li>Lack of refresher training leading to drift from safe excavation practices and hand digging techniques</li> </ul>		[REDACTED]	
9. Plant, Tools and Equipment Management for Hand Digging	<ul style="list-style-type: none"> <li>Inadequate selection of hand tools for excavation near services, increasing risk of service damage or strain injuries</li> <li>Lack of maintenance system for hand tools (shovels, crowbars, pinch bars) leading to tool failure or misuse</li> <li>No controls to prevent inappropriate use of powered tools (e.g. jackhammers, augers) in close proximity to live services</li> <li>Absence of pre-use inspection processes for excavation equipment and utility detection devices</li> <li>Insufficient calibration and maintenance of service locators and detection equipment</li> <li>Poor storage and transport arrangements for tools and equipment creating trip and manual handling risks on public footpaths</li> </ul>	3H	[REDACTED]	2M
10. Manual Handling, Ergonomics and Fatigue Management	<ul style="list-style-type: none"> <li>Prolonged and repetitive hand digging leading to musculoskeletal disorders and overexertion injuries</li> <li>Lack of planning for workload distribution and rotation of workers during intensive manual excavation</li> <li>Insufficient guidance on correct hand digging techniques and ergonomic postures in constrained spaces</li> <li>No structured approach to managing fatigue associated with physically demanding excavation works</li> <li>Inadequate consideration of manual handling risks from spoil removal, materials handling and shoring components</li> <li>Pressure to complete hand excavation quickly due to schedule constraints, encouraging unsafe pace or techniques</li> </ul>	3H	[REDACTED]	2M

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11. Traffic, Vehicle Interaction and Plant Interface	<ul style="list-style-type: none"> <li>Manual excavation workers exposed to passing vehicles or mobile plant operating near footpaths and verges</li> <li>Lack of formal traffic management system for deliveries, spoil removal trucks and support plant around excavation works</li> <li>Inadequate separation between hand digging areas and operating machinery such as excavators or skid steers</li> <li>Poor visibility of workers to plant operators due to inadequate high-visibility workwear or barriers</li> <li>No defined exclusion zones between manual excavation and moving vehicles or plant</li> </ul>	3H	[REDACTED]	2M
12. Public Safety, Community Notification and Stakeholder Management	<ul style="list-style-type: none"> <li>Members of the public exposed to trip, fall or struck-by hazards from poorly communicated excavation works</li> <li>Lack of notification to nearby residents, businesses or facility managers about upcoming hand digging near footpaths</li> <li>Inadequate process for managing complaints or concerns raised by the community regarding excavation activities</li> <li>No engagement with asset owners or service providers when working near critical utilities or easements</li> <li>Failure to provide clear contact details for reporting hazards or incidents related to excavation sites</li> </ul>	3H	[REDACTED]	1L
13. Incident Reporting, Service Strike Management and Investigation	<ul style="list-style-type: none"> <li>Under-reporting of near misses, minor service contacts and excavation-related incidents</li> <li>Lack of a structured response procedure for utility strikes, ground collapse or public injury incidents</li> <li>Failure to notify relevant authorities, utility owners or regulators when required under legislation</li> </ul>	3H	[REDACTED]	2M

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	<ul style="list-style-type: none"> <li>Inadequate root cause analysis of incidents leading to repeated failures in service protection and excavation systems</li> <li>Absence of formal corrective and preventive action tracking following incidents or near misses</li> </ul>		[REDACTED]	
14. Emergency Preparedness and Rescue Planning for Excavations	<ul style="list-style-type: none"> <li>Lack of documented emergency plans for trench collapse, worker injury or service strike during manual excavation</li> <li>No rehearsed rescue procedures for partially or fully buried workers in hand-dug trenches</li> <li>Insufficient communication equipment and protocols for summoning emergency services from remote or noisy sites</li> <li>Inadequate first aid coverage or equipment provision for excavation works</li> <li>Failure to consider emergency egress from deeper or confined hand excavations</li> </ul>	3H	[REDACTED]	2M
15. Monitoring, Inspection, Consultation and Continuous Improvement	<ul style="list-style-type: none"> <li>Infrequent or ineffective inspections of excavation sites and hand digging practices</li> <li>Lack of mechanisms for workers to provide feedback on excavation risk controls and improvement</li> <li>Failure to review risk assessments, permits and procedures in light of actual site conditions and incidents</li> <li>Inadequate performance indicators to monitor excavation safety performance over time</li> <li>Poor follow-up on identified non-conformances or audit findings related to manual excavation</li> </ul>	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>

**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/lit/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.