

Chemicals - Spills and Leaks

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:	

SAMPLE

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. Governance, WHS Duties and Legal Compliance	<ul style="list-style-type: none"> Lack of a documented WHS management system addressing chemical spills, leaks and fluid loss events Failure to identify and comply with WHS Act 2011, WHS Regulations and relevant Codes of Practice for hazardous chemicals and dangerous goods No clear allocation of PCBU, Officer, Worker and Other Persons duties for spill prevention and emergency response Inadequate oversight of contractors and labour-hire workers involved in spill response or handling chemicals and fuels Poor integration of environmental, emergency, and WHS requirements resulting in gaps for spill and leak management Absence of governance arrangements for approval and periodic review of spill management policies and procedures Inadequate consultation with safety representatives and workers on spill and leak risks and controls Inconsistent application of safety obligations at remote accident sites, roadside locations and client premises Insufficient due diligence by Officers regarding adequacy of resources and systems to control spill-related risks 	High	<ul style="list-style-type: none"> Establish and maintain a documented WHS management system that specifically addresses chemicals – spills and leaks, including fuel, oils, hydraulic fluids and toxic substances encountered during normal work and accident response Undertake a legal obligations register covering the WHS Act 2011, WHS Regulations, relevant Australian Standards and environmental legislation relating to hazardous chemicals, fuel storage, spill control and emergency response Define and document WHS roles, responsibilities and authorities for PCBUs, Officers, managers, supervisors, spill response coordinators and workers, with explicit reference to spill prevention, containment and clean-up accountability Implement a documented contractor management procedure requiring verification that contractors engaged in spill response, fuel transfer, chemical transport, or accident recovery have equivalent WHS and spill management standards Integrate chemical spill and leak management into existing emergency management, incident management, and environmental management systems, including escalation pathways and notification requirements Establish a governance schedule for periodic review (at least annually or after significant incidents) of spill-related policies, procedures, risk assessments and emergency plans, endorsed by senior management Implement formal consultation mechanisms (e.g. WHS committee, toolbox talks, HSR forums) that specifically include discussion and worker input on spill and leak hazards, controls and incident learnings Include spill and leak management expectations, including response at accident sites and off-site locations, in WHS policies, induction materials and contractual agreements with clients where relevant Require Officers to periodically review reports on spill incidents, near misses, audit findings and corrective actions to demonstrate ongoing due diligence and resourcing of spill control systems 	Medium
2. Chemical and Fuel Procurement, Selection and Inventory Management	<ul style="list-style-type: none"> Purchasing hazardous chemicals, fuels and oils without WHS risk assessment or compatibility review Use of chemicals with unnecessary toxicity, flammability or environmental hazard when safer alternatives exist 	High	<ul style="list-style-type: none"> Implement a formal chemical and fuel procurement procedure requiring WHS risk assessment, including consideration of spill and leak risks, before introduction of new substances or changes in packaging Adopt a substitution and minimisation strategy, preferring lower-hazard products (e.g. less volatile, less toxic, reduced environmental impact) where reasonably practicable while still meeting operational needs Standardise chemical, fuel, oil and hydraulic fluid products where practicable to simplify storage, handling, labelling and spill response requirements 	Medium

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	<ul style="list-style-type: none"> Inadequate control over the range and volume of chemicals, leading to complex spill scenarios and incompatibilities Lack of standardisation of products (e.g. multiple fuel, oil or solvent types) increasing risk of incorrect handling and leaks Poor inventory control resulting in unlabelled, out-of-date or degraded containers prone to leaks Procurement of spill response products (absorbents, neutralisers, drain covers) that are unsuitable for specific site conditions or chemicals No system to ensure Safety Data Sheets (SDS) are obtained, current and accessible for all chemicals likely to be involved in spills or leaks Inadequate evaluation of container quality, packaging robustness and transport suitability for mobile and remote work Failure to consider environmental and emergency response implications when selecting bulk fuel and chemical supply systems 		<ul style="list-style-type: none"> Establish an inventory control system that records chemical types, quantities, locations, container types and expiry dates, and flags items prone to leak or degrade over time Specify minimum container standards and packaging requirements in purchasing documents, including UN-approved containers for dangerous goods and robust packaging for mobile operations Require suppliers to provide current Australian-compliant SDS for all chemicals and fuels, and link SDS data into internal spill response and emergency planning documentation Evaluate and standardise spill response equipment and consumables (absorbent pads, booms, neutralisers, drip trays, drain covers, over-drums) to ensure compatibility with the chemicals and fuels used Include environmental and emergency response criteria in procurement decisions for bulk tanks, bowsters, intermediate bulk containers (IBCs) and mobile fuel systems, including secondary containment provisions Periodically review inventory to rationalise the range of chemicals held, remove obsolete substances, and reduce the volume of stored hazardous materials where safe and practicable 	
3. Storage, Containment and Transfer Systems	<ul style="list-style-type: none"> Inadequate bunding or secondary containment for bulk fuel, oil and chemical storage leading to major spills during leaks or tank failures Poorly designed or maintained storage areas prone to impact damage, corrosion or overfilling Lack of standardised systems for decanting and transferring liquids between tanks, IBCs, drums, vehicles and plant Incompatible storage of chemicals that could react dangerously if mixed during a spill or leak event Insufficient segregation between hazardous chemical storage and ignition 	High	<ul style="list-style-type: none"> Design and maintain fixed and mobile storage systems (tanks, IBCs, drums, day tanks) with compliant bunding or secondary containment sized according to regulatory and Australian Standard requirements Develop engineering and layout standards for chemical and fuel storage areas to address impact protection, corrosion resistance, overflow protection, signage, access, emergency egress and spill-resistant flooring Implement uniform decanting and transfer systems (pumps, hoses, nozzles, couplings) selected for chemical compatibility and designed to minimise manual handling and leak potential Enforce segregation and compatibility rules for storage of hazardous chemicals, fuels and oils to prevent dangerous reactions during spills, guided by SDS and compatibility charts Apply zoning and separation distances to keep storage areas away from ignition sources, traffic corridors, drains, pits and environmentally sensitive areas, and incorporate physical barriers where needed Standardise the location and layout of spill kits and emergency response caches so that they are clearly marked, unobstructed, routinely inspected and sized for credible worst-case spills 	Low

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	<ul style="list-style-type: none"> sources, traffic routes, stormwater drains or sensitive environments • Improper storage of spill response equipment, making it inaccessible or ineffective during time-critical leak events • Temporary or ad hoc storage arrangements at accident scenes, remote worksites or customer premises without secondary containment • Uncontrolled connection and disconnection of hoses, couplings and lines leading to recurring minor leaks and drips • Failure to provide engineered containment systems for likely spill pathways, such as slopes toward drains or watercourses 		<ul style="list-style-type: none"> • Create protocols and pre-planned setups for temporary containment at accident sites or remote operations, including portable bunds, inflatable booms and drain covers • Establish procedures and technical specifications for hose selection, inspection, colour coding and quick-connect systems to reduce cross-connection and inadvertent leaks during connection or disconnection • Design site drainage and work pads so that likely spill pathways are directed toward controllable collection points or containment areas rather than stormwater or soil, supported by drawings and site plans 	
4. Plant, Equipment and Infrastructure Integrity	<ul style="list-style-type: none"> • Failure of tanks, hoses, pipes, hydraulic systems, seals or fittings leading to acute chemical or fuel leaks • Chronic seeping leaks from valves, flanges, hydraulic lines or engines causing accumulated contamination and slip hazards • Use of damaged or incompatible hoses and couplings for diesel, oils, solvent and other hazardous liquids • Inadequate inspection, testing and preventive maintenance regimes for fuel systems, hydraulic systems and chemical transfer equipment • Modifications or repairs to tanks and piping that are not engineered or documented, creating latent leak risks • Absence of monitoring systems to detect slow leaks in underground or concealed tanks, lines or bunds • Failure to isolate and manage out-of-service equipment containing residual chemicals or fluids 	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

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	<ul style="list-style-type: none"> Improperly maintained spill control infrastructure such as bund drains, sump pumps, oil-water separators and containment valves 		[REDACTED]	
5. Chemical Identification, Labelling and Safety Data Management	<ul style="list-style-type: none"> Unlabelled or poorly labelled containers leading to incorrect spill clean-up methods and increased exposure to toxic substances Out-of-date or inaccessible Safety Data Sheets for chemicals, fuels and oils used or transported Inconsistent naming of products across suppliers, labels and internal documentation creating confusion during emergency response Decanted liquids stored in secondary containers without compliant labels, resulting in unknown hazards at the time of a spill No central register of hazardous chemicals, including those carried on vehicles or used at site locations Inadequate communication of specific hazards of hydraulic fluids, lubricants and other industrial fluids in comparison to more obviously hazardous chemicals Lack of information flow to emergency services and external responders attending major spills or accident-related leaks 	High	[REDACTED]	Low
6. Training, Competency and Awareness	<ul style="list-style-type: none"> Workers and supervisors not trained in chemical hazard recognition, spill behaviour or appropriate clean-up methods Inadequate competency in using spill kits, containment systems and decontamination equipment at accident scenes or remote locations Lack of understanding of escalation thresholds, notification requirements and 	High	[REDACTED]	Medium

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	<p>when to call emergency services for major spills or toxic substance releases</p> <ul style="list-style-type: none"> • Insufficient training in diesel, hydraulic fluid and oil spill characteristics, leading to underestimation of health, fire and environmental risks • No structured competency assessment or refresher training for personnel with key spill management responsibilities • Limited awareness of the interaction between spill response activities and other hazards, such as traffic, moving plant, confined spaces or fire • Poor supervisor capability to plan work, allocate resources and verify controls for tasks with elevated spill and leak risk 		[REDACTED]	
7. Operational Planning and Risk Management for Spill-Prone Activities	<ul style="list-style-type: none"> • Lack of formal risk assessments for activities with elevated spill potential such as bulk fuel transfers, mobile refuelling, hydraulic maintenance and accident recovery • Inadequate planning for spill at client sites, public roads, remote locations or environmentally sensitive areas • No pre-deployment checks to verify that vehicles and teams attending accident sites or high-risk tasks have appropriate spill response equipment and PPE • Failure to consider weather, terrain and access conditions that may increase spill spread or complicate clean-up at incident scenes • Insufficient integration between journey management, traffic control and spill response planning for roadside incidents • Over-reliance on emergency services or external contractors without clear internal triggers or interim control expectations 	High	[REDACTED]	Medium

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	<ul style="list-style-type: none"> Poor communication and coordination between dispatch, field crews and supervisors when a spill or leak occurs 		[REDACTED]	
8. Emergency Preparedness, Response and Escalation	<ul style="list-style-type: none"> Absence of a coordinated emergency response plan for chemical and fuel spills across all worksites and field operations Unclear priorities during spill response, leading to unsafe worker exposure or uncontrolled environmental contamination Insufficient spill response equipment and personal protective equipment (PPE) for credible worst-case scenarios, including multi-vehicle accidents with fuel tank breaches Delayed or inconsistent notification of emergency services, regulators, clients and internal management during significant spills Poor integration of spill response with first aid, fire response and site evacuation procedures Lack of pre-planned communication templates and incident action plans for major or escalating events Inadequate post-incident recovery planning, including decontamination, waste removal and verification of clean-up effectiveness 	High	[REDACTED]	Medium
9. Personal Protective Equipment and Health Monitoring Systems	<ul style="list-style-type: none"> Inadequate PPE specifications for chemical spill response leading to exposure to toxic or irritant substances via skin contact, inhalation or ingestion Reliance on PPE as a primary control rather than as part of a broader hierarchy of controls for spills and leaks Inconsistent availability and maintenance of PPE across worksites, vehicles and emergency response kits 	Medium	[REDACTED]	Low

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	<ul style="list-style-type: none"> Lack of guidance on PPE selection for mixed spills, unknown substances or degraded fuels and oils Insufficient health monitoring and exposure surveillance for workers repeatedly involved in chemical spill clean-up No system for reporting, assessing and responding to potential acute exposures during major spill events 		[REDACTED]	
10. Waste Management, Decontamination and Environmental Protection	<ul style="list-style-type: none"> Improper handling, storage or transport of contaminated absorbents, soil, water and PPE following spill clean-up Inadequate classification of spill waste leading to non-compliant disposal or secondary contamination Failure to decontaminate plant, tools and equipment after spill events, resulting in ongoing exposure and leak potential Release of contaminated water or rinse residues into stormwater or environment Lack of systems for recording, tracking and verifying the final disposal of spill-related waste Insufficient coordination with licensed waste contractors and receiving facilities for spill clean-up residues No clear organisational standard for when environmental specialists or remediation experts must be engaged after significant spills 	High	[REDACTED]	Medium
11. Incident Reporting, Investigation and	<ul style="list-style-type: none"> Under-reporting of minor spills, leaks and near misses, limiting opportunities to identify systemic weaknesses 	High	[REDACTED]	Low

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Continuous Improvement	<ul style="list-style-type: none"> • Superficial incident investigations focusing only on operator error instead of underlying organisational causes • Lack of trend analysis for recurring leak locations, equipment types or chemicals • Delayed implementation or poor tracking of corrective actions following significant spills or regulatory interventions • Failure to share lessons learned across sites, teams and contractors, leading to repeated spill events • Inadequate linkage between incident data, risk assessments, training and procedural updates 		<p>[REDACTED]</p>	
12. Auditing, Monitoring and Review of Spill Management Systems	<ul style="list-style-type: none"> • Absence of systematic verification that spill management policies, procedures and controls are implemented and effective • Reliance on informal checks or reactive responses rather than structured auditing and monitoring • Failure to detect deterioration of containment systems, spill kits and emergency readiness over time • Inadequate review of changing operations, new chemicals or altered work environments that may increase spill risk • Lack of measurable performance indicators for spills, leaks and emergency response capability 	Medium	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Low

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	<ul style="list-style-type: none"> Limited senior management visibility of spill-related risk status and control effectiveness 		<div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div>	

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.