

QUICK GUIDE

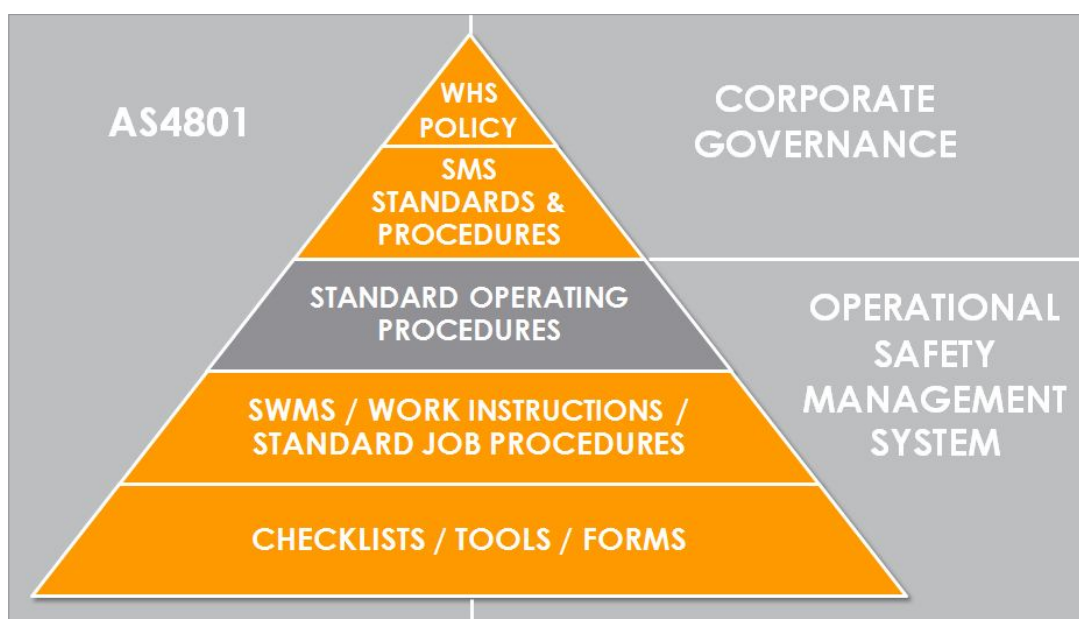
SAFETY Everyone. Everywhere. Every day

PRESSURE SAFETY

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1. SMS DOCUMENT HIERARCHY



2. PURPOSE

This Quick Guide documents Queensland Urban Utilities (QUU) approach to pressure safety. The aim is to ensure that risks associated with pressure applications are adequately managed in order to minimise the risk of injury or harm to workers.

This Quick Guide has been developed as an information and planning resource only and is not to be used as a WHS inspection or audit tool. WHS audits and inspections must be undertaken using the relevant WHS audit or inspection tool as outlined in **WHS Audit and Inspection Procedure (PRO366)**.

3. RELATED DOCUMENTS

- WHS Consultation and Communication Procedure (PRO361)
- WHS Hazard and Risk Management Procedure (PRO363)
- WHS Incident Reporting, Investigation and Escalation Procedure (PRO364)
- Hazardous Chemicals SOP (PRO377)
- Fire Management SOP (PRO376)
- Plant SOP (PRO386)
- Confined Spaces SOP (PRO444)
- Personal Protective Equipment (PPE) SOP (PRO424)

- Lock Out Tag Out (LOTO) SOP (PRO379)

4. FURTHER INFORMATION

For further information, contact your Health and Safety Representative or the QUU Safety Team.

5. PROCESS ACTIONS TO ACHIEVE COMPLIANCE

AT ALL TIMES	REFERENCE
1. OVERVIEW	
(a) The risk for all pressure applications that could cause injury or damage must be identified and assessed.	Section 7.1 (PRO###)
(b) Suitable plant and equipment must be supplied and maintained for workers to reduce the likelihood of a pressure-related incident.	
(c) Instruction in safe pressure application practices must be provided to workers.	
(d) Workers must be educated in the risks of pressure applications and the controls required for managing pressure activities.	
(e) Pressure application-related emergency response, rescue and first aid plans must be developed and tested.	
2. PRESSURE WASHING / STEAM CLEANING / USE OF HYDRAULIC HOSES	
(a) <i>Safety requirements:</i> <ul style="list-style-type: none"> • Before water jetting or steam cleaning activity can commence, a WRAP must be completed. 	Section 7.2 (PRO###)
(b) <i>General precautions:</i> <ul style="list-style-type: none"> • All plant, equipment and attachments must only be used in accordance with the manufacturer's recommendations. • All jetting and steam cleaning equipment and attachments must not be modified in any way. • Equipment must not be used unless it: <ul style="list-style-type: none"> ◦ Has been inspected/serviced in accordance with the manufacturer's recommendations; and ◦ Is free from any fault that may adversely affect its performance and safe operation. • All equipment near jetting/steam cleaning operations must be shielded/protected from debris and water. • All electrical components must meet the required protection levels against water vapour and overspray. • No persons other than the operating team are permitted within the barricaded work areas. • Safe access to the equipment and item/surface being cleaned must be provided at all times. • Overhead work must be avoided where possible. • Before starting jetting/steam cleaning activities, operators must be in a safe and well-balanced position. • Jetting/steam cleaning activities must not be performed: <ul style="list-style-type: none"> ◦ From ladders or other surfaces not intended for use by 	

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<p>workers; or</p> <ul style="list-style-type: none"> ○ On asbestos-containing material. • Before starting jetting/steam activities, the operator must check that there is no interruption or interference to the release mechanism of any hand/foot controls that are used to safely stop the equipment operating. • Jetting/steam cleaning operations must stop when: <ul style="list-style-type: none"> ○ Conditions change or new hazards are introduced; ○ Unauthorised people enter the barricaded area; ○ Recommended safe work practices are not being followed; or ○ A malfunction occurs. • Jetting/steam cleaning machines should be depressurised and secured when: <ul style="list-style-type: none"> ○ Not in use or left unattended; or ○ Components are being replaced or repairs are being made to the system. • Operators must never direct the water/steam flow toward any other person. • Pressurised equipment must never be left unattended. • After jetting/steam cleaning activities have been completed, operators must undertake full hygiene practices (e.g. change clothes, have shower etc.) as necessary for the task. 	
<p>(c) <i>Pump unit precautions:</i></p> <ul style="list-style-type: none"> • The pump unit must be maintained in accordance with the manufacturer's instructions. • The entire pump unit must be checked as part of the daily Pre-Start Check. 	
<p>(d) <i>Filter precautions:</i></p> <ul style="list-style-type: none"> • Water filters must be checked regularly in accordance with the manufacturer's recommendations. • Water must be cleaned through filters that meet the manufacturer's recommendations. 	
<p>(e) <i>Hose precautions:</i></p> <ul style="list-style-type: none"> • Hoses, couplings, connections and end fittings that are suitable for the activity must only be used. • Before each use, hose assemblies must be visually inspected by a competent person to ensure: <ul style="list-style-type: none"> ○ The correct pressure rating and size is selected; ○ There is no apparent damage (e.g. corroded/broken wires, bulging, kinking or cuts); ○ End fittings are in good condition and are the correct pressure rating for the unit; and ○ Hose connections to equipment/other hoses are restrained (e.g. with braided stockings) to stop their movement if the hose end fails. • When water supply and jetting hoses are laid across thoroughfares, walkways or roads vehicle cable protectors must be used. • Where hoses need to be hung vertically, they must be supported by 	

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<p>a wire stocking. Where multiple lengths of hose are used this way, they must be supported at points below each coupling.</p> <ul style="list-style-type: none"> To ensure that hose assemblies are kept in a safe condition, they: <ul style="list-style-type: none"> Must not be unnecessarily subjected to frequent and prolonged periods of high pressure; Must not be used in temperatures higher than the stated rating; Must not be unnecessarily exposed to chemicals/corrosive substances; Must not be used in functions that require repetitive/prolonged use (e.g. long-line drain cleaning); Must not be exposed to sharp, protruding or abrasive surface; and Must be stored lying flat in a cool, dry area. If the following faults are identified, the equipment must not be used and must be immediately taken out of service: <ul style="list-style-type: none"> Hoses with broken wires, deep abrasions, kinking, blisters or bubbles in the outer covering; or End fittings/crimping with cracks, corrosion, damaged threads or other evidence that they may not be safe. Hoses must be tested when they: <ul style="list-style-type: none"> Are new; Have been damaged; Have been re-ended or repaired; and Have been exposed to adverse conditions which may have affected their integrity. Hose assemblies systems must be tested in accordance with the requirements of the relevant Australian Standard (AS3791-1991 or ASNZS4233 Part 1:1999). 	
<p>(f) <i>Nozzle precautions:</i></p> <ul style="list-style-type: none"> As part of the Pre-Start Check, nozzles must be inspected before each use for: <ul style="list-style-type: none"> Blocked/damaged holes; Damage to threads; Cracks; and Other structural damage that could affect their safe operation. Nozzles that have been identified as defective must not be used. They must be removed from service immediately and repaired or destroyed. Nozzles must be kept clean and stored safely when not in use. 	
<p>(g) <i>Electrical equipment precautions:</i></p> <ul style="list-style-type: none"> Cables, plugs, connects and control devices must be checked before any works commence. Where water jetting/steam cleaning activities are to be carried out within a potentially explosive atmosphere, the pump equipment must meet the requirements of AS 2380.1-1989. 	
<p>(h) <i>Hazardous material precautions:</i></p>	

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<ul style="list-style-type: none"> Product safety data sheets (SDSs) must be obtained before starting jetting/steam cleaning activities if hazardous materials are present or suspected to be present in the material/coating being jetted. Appropriate controls must be put in place to eliminate or minimise exposure to any hazardous materials identified in the risk assessment process. This may include that is suitable for the hazardous materials identified/suspected. 	
<p>(i) <i>Personal protective equipment:</i></p> <ul style="list-style-type: none"> Appropriate PPE must always be worn, regardless of the other control measures that are in place. This includes: <ul style="list-style-type: none"> Waterproof suit/overalls; Face shield, goggles or blast mask; Waterproof boots; PVC gauntlet gloves; Heat-resistant clothing (for steam cleaning only); Hearing protection (if required); and Breathing equipment or respirators (if required). Additional PPE may be required for certain jetting activities, as determined by risk assessment. This may include liquid/chemical-resistant suits, leg guards or head protection. 	
<p>(j) <i>Maintenance and repairs:</i></p> <ul style="list-style-type: none"> Operators of jetting/steam cleaning systems must not carry out repairs, other than simple adjustments to or replacements of parts which are listed in the manufacturer's instructions for use/periodic service. Other repairs, maintenance and servicing operations must be carried out by the manufacturer or other suitably qualified people. Maintenance records must be kept for each major piece of the jetting/steam cleaning equipment. Jetting/steam cleaning parts or assemblies that need to be identified for service, maintenance or application must be permanently marked with enough information to identify the part, its use and performance in a way which is easy to read. 	
3. PRESSURE VESSELS	
(a) Hazard identification and risk assessment must be undertaken for all pressure vessels on-site.	Section 7.3 (PRO###)
(b) Pressure vessels must be installed and stored in compliance with the appropriate Australian Standards, Codes and Legislation.	
(c) Pressure vessels must be maintained in accordance with the manufacturer's instructions.	
(d) Pressure vessels must be maintained and repaired by qualified persons.	
(e) All workers required to work with pressurised vessels must be trained in its safe use/operation. Where necessary, workers must have appropriate certificates of competency (e.g. boiler certificate). Training records must be retained.	
(f) All pressure equipment, including piping, must be appropriately labelled.	

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(g) Pressure vessels must not be operated without an appropriate and properly functioning pressure gauge and safety relief valve.	
(h) Safety relief valves must not be removed or obstructed/restricted by any means (e.g. tie downs, paint, caps, blocks etc.).	
(i) Only pipes, tubing, fittings and valves appropriate to the pressure vessel's fluid and maximum allowable working pressure (MAWP) must be used.	
(j) Pressure vessels must be kept level at all times. If the pressure vessel is mounted, appropriate vibration protection must be in place.	
(k) Pressure vessels must be protected from damage caused by vehicle traffic or general work operations.	
(l) Materials, supplies or stock must not be piled up against any pressure vessel.	
(m) Before operating a pressure vessel, it must be inspected by the operator for corrosion, fatigue or build-up of deposits. If any faults are identified, the equipment must be immediately removed from service and promptly reported to a Supervisor.	
(n) Workers must not operate a pressure vessel at a pressure higher than its maximum allowable working pressure (MAWP).	
(o) If a worker is required to enter a pressure vessel for maintenance or repairs, they must have received and comply with Confined Space Training.	
(p) All pressure vessels must be maintained in accordance with the relevant standards, including AS3873.	
(q) All records of maintenance/repair must be retained and kept with the pressured vessel.	
(r) All pressure vessels categorised as a hazard level of A, B or C (according to the criteria defined in AS4343) must have current registration with Workplace Health and Safety Queensland. The R.A.M.P Team are responsible for registering pressure vessels.	
(s) All registration certificates must be kept with the pressure vessel.	
4. COMPRESSED/LIQUIFIED GAS CYLINDERS	
<p>(a) Gas cylinders must be stored and handled appropriately at all times. Cylinders:</p> <ul style="list-style-type: none"> • Must be restrained and secured against movement with chain or strap (i.e. not rope) at all times during storage, transport and use. • Must be stored and transported in an upright position. • Must be stored in a clean area free from oil and grease. • Must be sheltered from weather conditions, such as sunlight. • Must be clearly labelled with their content. • Must be stored away from doorways, stairs and aisles, and must not be positioned in an access way or traffic area. • Must be stored at least 6 meters away from flammable materials such as fuel, paint and solvents. • Must be maintained free from leaks and dents. • Must not be dropped. 	Section 7.4 (PRO###)

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(b) Cylinder storage areas must be designated and signed appropriately.	
(c) All sources of heat and ignition must be kept away from cylinders, even if the cylinders do not contain flammable material.	
(d) To ensure the controlled release in an emergency situation:	
(e) Oxygen, hydrogen, carbon dioxide and inert gas cylinders must be fitted with a bursting disc safety device;	
(f) LPG cylinders must have an operation spring-loaded pressure release valve; and	
(g) Acetylene cylinders must be fitted with a fusible plug in the neck of the cylinder and must always be stored and used in an upright position.	
(h) Flashback arrestors must be fitted at the blow pipe and to the oxygen and fuel gas regulators.	
(i) Before commencing any activity, workers must check all cylinder fittings to ensure they are not damaged or in poor condition, and that they are ready for safe use.	
(j) If a cylinder has a valve tool, this must not be tampered with in any way. The cylinder valve must be kept closed at all times apart from during welding operation.	
(k) When opening cylinder valves, workers must stand to the side of the regulator, and never stand in front of it.	
(l) If a small leak occurs, the cylinder valve must be closed (if possible). The area must be well-ventilated and any air conditioning systems must be turned off to avoid the spread gas. In the event of a large amount of gas escaping, emergency procedures must be implemented immediately.	
(m) Oxygen cylinders and fittings must not be lubricated with grease or oils or stored with grease or oils.	
(n) Gas cylinders must not be transported within closed vehicles with all attachments removed from the cylinder valve.	
(o) Gas cylinders must not be taken into any confined spaces.	
5. PRESSURISED WATER MAINS	
(a) If water mains need to be pressurised, the pressure must be released before any work on the mains commences.	Section 7.5 (PRO###)
6. HYDRAULIC PRESSURE	
(a) A plant risk assessment must be undertaken in relation to hydraulic pressure activities.	Section 7.6 (PRO###)
(b) Before any hydraulic pressure activities are carried out, the equipment must be visually expected to ensure that it is in good working condition and there is no apparent damage. If a fault is identified, the equipment must be immediately tagged out for repair.	
7. TRAINING, COMPETENCY & SUPERVISION	
(a) All workers involved in any pressure applications must be trained and have the appropriate skills to carry out the task safely.	Section 7.7 (PRO###)
(b) If a pressure related task requires competency certification (e.g. working in boilers), all workers carrying out that task must have	

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appropriate certificates of competency.	
(c) QUU will provide instruction to workers on: <ul style="list-style-type: none"> • Hazards associated with pressure applications; • The safe use of QUU pressure equipment; • Manufacturer's requirements for pressure equipment. • Safety Data Sheets (SDSs); and • Emergency procedures related to pressure applications 	

6. REVIEW PROCESS

This document is to be reviewed every 12 months or earlier if:

- there is an identified risk to business;
- a significant safety event occurs;
- incident investigation or audit results show that application of the Quick Guide fails to deliver the required outcomes;
- there are changes in associated legislation; or
- there is evidence that the Quick Guide is not having a positive impact on safety-related KPIs.