



# Wet and Dry Well Sewage Pumping Stations

## Operations and Maintenance Manual

Address: 4/43-49 Sandgate Road  
Albion Qld 4010  
Post: PO Box 2100  
Fortitude Valley Qld 4006  
Phone: 07 3632 6850 Fax: 07 3632 6899  
Email: [enquiry@qldwater.com.au](mailto:enquiry@qldwater.com.au) Web: [www.qldwater.com.au](http://www.qldwater.com.au)

## DISCLAIMER, COPYRIGHT, ACKNOWLEDGEMENTS

### Warning and Disclaimer

The Queensland Water Directorate (*qldwater*) is an operational division of the Institute of Public Works Engineers Australia (Queensland Branch) Inc. (IPWEAQ). *qldwater* and IPWEAQ have sought to ensure that the information in this publication is current at the time of publication. However, users of this guideline should note the following:

- *qldwater* and the IPWEAQ do not guarantee the accuracy, currency or completeness of information contained in the guidelines;
- in specific matters, users of the guidelines should independently inform themselves of current best practice procedures, any changes to the information in these guidelines and the most appropriate manner of addressing the matter;
- *qldwater* and IPWEAQ are not responsible for any actions taken on the basis of information contained in these guidelines or any error or omission in the information;
- *qldwater* and IPWEAQ are not liable for any loss or damage sustained by any person from the use of these guidelines and;
- *qldwater* and IPWEAQ expressly disclaim any liability and responsibility to any person in respect of anything done or omitted to be done by relying directly or indirectly on information in these guidelines.

### Copyright

Copyright and all other intellectual property rights in these guidelines are held by *qldwater* for the IPWEAQ. Except as permitted by law, these guidelines should not be reproduced without written permission from *qldwater*. The guidelines must only be used in accordance with the information in it.

### Acknowledgements

The Queensland Water Directorate (*qldwater*) would like to thank the numerous people who provided assistance and information during the production of these guidelines. Thanks in particular go to the Technical Reference Group of *qldwater* who provided direction and technical input and also reviewed the final document.

*qldwater* is an initiative of IPWEAQ, LGAQ, AWA, and LGMA.





# CONTENTS

Disclaimer, Copyright, Acknowledgements .....	2
Contents .....	3
Introduction .....	4
Work Method Statements .....	5
Confined space procedure .....	5
Confined space entry permit .....	7
Isolation safety tag and lockout procedure .....	9
Pump station routine inspection procedure .....	11
Dry well pump inspection and maintenance procedure .....	13
Pump station inspection and cleaning procedure .....	15
Wet well pump inspection and maintenance procedure .....	17
Pump station electrical inspection and maintenance procedure .....	19
Pump station overflow prevention procedure .....	21



## SEWAGE PUMP STATION ROUTINE INSPECTION AND MAINTENANCE

### Purpose

The Queensland Water Directorate has developed a set of notes on planned inspection and maintenance procedures for sewage pump stations to assist member Councils.

### Introduction

Regular inspection of pump stations and planned maintenance will extend the useful life of assets. It will also reduce the number of equipment failures and the risk and frequency of sewage overflow events. Councils need to be pro-active with respect to pump station maintenance for legal reasons and to protect public health and the environment, in addition to demonstrating best practice to ratepayers.

Procedures have been developed for inspection and maintenance as listed below:

- Pump Station Routine Inspection
- Pump Station Inspection and Cleaning
- Wet Well Pump Inspection and Maintenance
- Dry Well Pump Inspection and Maintenance
- Pump Station Electrical Inspection and Maintenance

Essential supporting safety and environmental procedures are as follows:

- Confined Space Entry
- Isolation Safety Tag and Lock Out
- Pump Station Overflow Prevention

Documentation has been limited to 20 pages for ease of use so that each operator can have a copy of the notes or they could be kept in the maintenance truck. More detailed information can be found in Manufacturer's Pump and Motor Maintenance manuals. In addition, the Water Directorate documentation on Sewage Treatment Plant Operations and Maintenance contains more comprehensive information - particularly with respect to policies for Safety, Environment and Risk Management.

Therefore Council's should not rely on the completeness of these procedures as they are generic and may contain omissions or errors as they cannot cover all the different types of pump station. Hence the Water Directorate cannot accept liability for loss or damage arising from the use of the procedures which are, by nature, concise to facilitate usage.

Inspection and maintenance frequencies are site specific but typically could be:

Procedure	Frequency	Purpose
<b>Routine Inspection</b>	<b>Weekly</b>	<b>Check pumps &amp; alarm system</b>
<b>Inspection &amp; Cleaning</b>	<b>Weekly</b>	<b>Prevent breakdowns and odours</b>
<b>Wet well Pump Inspection</b>	<b>3 Monthly</b>	<b>Reduce risk of pump failure</b>
<b>Dry well Pump Inspection</b>	<b>6 Monthly</b>	<b>Reduce risk of pump failure</b>
<b>Electrical Inspection</b>	<b>6 Monthly</b>	<b>Electrical safety &amp; prevent motor failure</b>

The Water Directorate wishes to acknowledge the information and help provided by Cairns Water, Gold Coast Water, Morton Bay Water, Sunshine Coast Water and Wide Bay Water Corporation.

# WORK METHOD STATEMENT

## CONFINED SPACE PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

*All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and / or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.*

Council Details	
Council ABN	
Site Location	
Planned high risk activity	Entering a confined space to:

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List	Certificate No
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	<b>Pre-Start</b>	<ul style="list-style-type: none"> <li>Pre-start briefing to ensure all staff are fully aware of the scope of work before work commences.</li> <li>Ensure all persons have undertaken WH&amp;S induction and confined space training.</li> </ul>	
<input type="checkbox"/>	<b>Gas, Engulfment, Heat Stress.</b>	<ul style="list-style-type: none"> <li>If possible, choose an alternate work method that does not require persons to enter the confined space.</li> <li>Follow the safe working procedure for confined space.</li> <li>Fill out the 'Permit for Entry' before entering the confined space.</li> <li>Entry <b>and</b> standby personnel are to be adequately trained and assessed competent to perform confined space duties.</li> <li>Monitor the confined space atmosphere before entry and during work using an appropriately inspected and calibrated gas monitor.</li> <li>Where oxygen, hydrogen sulphide or methane are outside safe exposure levels, do not enter the space or leave the confined space area immediately.</li> <li>Use appropriate safety equipment when required.</li> <li>'Permit to Enter' forms are to be kept on the site files.</li> <li>Consider heat stress and remove people where excessive.</li> <li>All personnel are to be made aware of emergency evacuation procedures before work commences.</li> </ul>	

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	<b>Hot Work (welding, oxy-cutting)</b>	<ul style="list-style-type: none"> <li>As well as undertaking the above procedures, the following are required.</li> <li>A Hot Work permit is required to be completed before conducting any hot work in a confined space.</li> <li>A fire extinguisher is to be made available at the confined space.</li> </ul>	
<input type="checkbox"/>	<b>Other (please state)</b>	<ul style="list-style-type: none"> <li>Before commencing work, a competent person or supervisor will check the gas monitor for correct operation.</li> <li>Person in charge is to ensure that confined space has been isolated from potential hazards (e.g. sewage spills, valves, machinery)</li> <li>Person in charge is to ensure there is adequate ventilation and atmospheric gas testing prior to entry.</li> </ul>	
<b>Monitoring of Site Controls</b>		<ul style="list-style-type: none"> <li>Confirm all work permits have been completed.</li> <li>Check all safety equipment, e.g. harnesses, lifting tripod, lifelines etc.</li> <li>Ensure that PPE is being used and maintained.</li> <li>Continuous gas testing whilst operators are in the confined space.</li> <li>Monitoring of operators in the confined space by stand-by person.</li> <li>If an alarm is activated, all persons to evacuate immediately.</li> <li>After exit, confirm that all persons and equipment are accounted for, entry point secured and all isolations restored.</li> </ul>	
Tick	TASK	PROCEDURE	
<input type="checkbox"/>	<b>Inspections</b>		
<input type="checkbox"/>	<b>Maintenance Steps</b>		
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>This WMS has been reviewed for this particular procedure</li> <li>Date of review: ...../...../.....</li> </ul>	

# WORK METHOD STATEMENT

CONFINED SPACE ENTRY PERMIT					
GENERAL					
Location of work:					
Date:					
Description of work:					
HAZARDS:					
Work Method Statement <b>MUST</b> be sighted for going into a Confined Space.					
CONTROL MEASURES					
Isolation					
Space needs to be isolated from:					
Location/Method					
Water/gas/steam/chemicals					
Mechanical /electrical device					
Auto fire extinguishing systems					
Hydraulic/electric/gas/power					
Sludge/deposits/wastes					
Lock and/or tags have been affixed to isolation points					Yes / No
Atmosphere Test				Personal Protective Equipment	
The atmosphere in the confined space has been tested:				The following safety equipment shall be worn:	
Results of Test:	Test:1	Test:2	Test:3		
Oxygen				Respiratory protection	Yes / No
Flammable gases				Harness / lifeline	Yes / No
Hydrogen Sulphide				Eye protection	Yes / No
Carbon Dioxide				Hand protection	Yes / No
ALARM RESULTS				Footwear	Yes / No
Oxygen				Protective clothing	Yes / No
Flammable Gases				Safety helmet	Yes / No
Hydrogen Sulphide				Hearing Protection	Yes / No
Carbon Dioxide				Tripod	Yes / No
Other Contaminants:				Rescue master	Yes / No
				Communication Equipment	Yes / No
				Other	

Hot Work		Other Precautions			
Area clear of all combustibles including Atmosphere	Yes / No	Warning notice / barricades	Yes / No		
		Smoking forbidden	Yes / No		
Type of appropriate fire prevention equipment available	Yes / No	All persons have been trained	Yes / No		
Suitable access and exit	Yes / No	Ventilation requirements:			
Hot work is permitted	Yes / No				
Emergency Response Procedures / Equipment		Stand-by Personnel Name/s			
		1.			
		2.			
		3.			
		4.			
AUTHORITY TO ENTER					
The control measures and precautions appropriate for the safe entry and execution of the work in the confined space have been implemented and the persons required to work in the confined space have been advised of and understand the requirements of this written authority.					
Signed:  (Person in direct control)		Date:	Time:		
This written authority is valid until:		Date:	Time:		
PERSONS REQUIRED TO ENTER CONFINED SPACE					
I have been advised of and understand the control measures and precautions to be observed with the entry and work in the confined space.					
ENTRY			EXIT		
Name	Date	Time	Name	Date	Time
WITHDRAWAL OF WRITTEN AUTHORITY					
All persons and equipment accounted for				Yes / No	
Equipment checked and restored correctly				Yes / No	
Signed:  (Person in direct control)		Date:		Time:	
Remarks or comments about the work:					



# WORK METHOD STATEMENT

## ISOLATION SAFETY TAG AND LOCK-OUT PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

*All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and/or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.*

Council Details	
Council ABN	
Site Location	
Planned high risk activity	Undertaking maintenance of

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List	Certificate No
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	<b>Pre-Start</b>	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training and are competent to perform maintenance work.</li> <li>Conduct a risk assessment prior to isolating equipment.</li> </ul>	
<input type="checkbox"/>	<b>Tagging Out of service Equipment</b>	<ul style="list-style-type: none"> <li>A "Tag" is attached to mechanical or electrical equipment directing persons NOT TO OPERATE or REMOVE TAG.</li> </ul>	
<input type="checkbox"/>	<b>Lockout (Danger Tags)</b>	<ul style="list-style-type: none"> <li>Lockout means physically isolating mechanical or electrical equipment and valves using a padlock or lockable switch.</li> </ul>	
<input type="checkbox"/>	<b>Other (please state)</b>	<ul style="list-style-type: none"> <li>When working on machinery, do not rely on the Emergency stop button, isolate at the main power control.</li> <li>Refer to Isolation Safety Tag and Lock-out Policy.</li> </ul>	
	<b>Monitoring of Site Controls</b>	<ul style="list-style-type: none"> <li>No person is to place themselves or others at risk of injury when working on electrical or mechanical equipment unless a 'Danger Do Not Operate Tag' and lock has been attached to the isolation control.</li> <li>Each person on the job is responsible for ensuring that the equipment is correctly isolated and their own 'Personal Danger Tag' and a lock are securely attached to the isolating control.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Prior to work starting</b>	<ul style="list-style-type: none"> <li>• Confirm all work permits have been completed.</li> <li>• Employees are to follow the procedure for Isolation, Tagging and Lockout and use the correct "Danger tags" and locks as required.</li> </ul>
<input type="checkbox"/>	<b>Maintenance steps</b>	<ul style="list-style-type: none"> <li>• Locate the correct electrical control switch or circuit breaker to be used for isolation and turn to the off position (Do not rely on the Emergency stop).</li> <li>• Isolate all related valves controlling air or liquid flows.</li> <li>• Always ensure that electrical circuit/equipment is effectively isolated before starting work by testing that equipment does not start when the local control switch is turned on.</li> <li>• Fill out a 'Personal Danger Do Not Operate Tag' by writing your name, telephone number, date, time and reason for isolating, then sign and attach the tag to the equipment.</li> <li>• Ensure each person working on the equipment is protected by placing their own 'Personal Danger Tag' on the electrical or mechanical control device.</li> <li>• An individual should not rely on a 'Danger Tag' placed by another person - always check and test.</li> <li>• Attach a lock or chain to ensure the equipment cannot be accidentally operated.</li> <li>• Notify relevant personnel that the equipment has been tagged and locked.</li> <li>• Personal Danger Tags' and locks are to remain in place at all times whilst a person is performing work on the isolated equipment and no equipment may be operated while a 'Danger or Caution - Out of Service Tag' is attached.</li> </ul>
<input type="checkbox"/>	<b>After work is completed</b>	<ul style="list-style-type: none"> <li>• Before a person removes a tag, they must satisfy themselves that the equipment or service is in proper working order and that its operation will not cause damage to plant or risk injury to other persons.</li> <li>• When each person completes their work, they are responsible for removing only their own 'Personal Danger Tag' and lock.</li> <li>• If other tag and locks have been attached these must only be removed by the person who originally attached them.</li> <li>• Notify all relevant personnel that the equipment can be returned to service.</li> <li>• If the equipment is not fit to be returned to service or is to remain out of service for a period of time because the work is incomplete, the person may remove their 'Personal Danger Tag' and attach a 'Caution - Out of Service Tag' to the equipment and then promptly notify the Supervisor.</li> <li>• A 'Caution - Out of Service Tag' is a notification of extraordinary circumstances e.g. Equipment is faulty.</li> <li>• <b>NOTE: The only circumstance under which a 'Personal Danger Tag' or lock can be removed, is by the person who placed it on the equipment. However, if that person is definitely unavailable, the supervisor may remove it but only if they are certain that no harm can be caused.</b></li> </ul>
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>• Report any concerns regarding Isolation - Tagging and Lockout procedures.</li> <li>• This WMS has been reviewed for this particular procedure.</li> <li>• Date of review: ...../...../.....</li> </ul>

# WORK METHOD STATEMENT

## PUMP STATION ROUTINE INSPECTION PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and/or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.

Council Details	
Council ABN	
Site Location	
<b>Planned activity</b>	<ul style="list-style-type: none"> <li>Routine sewage pump station maintenance inspection at sites located within roads or high traffic areas.</li> <li>Tasks include checking switchboard, pumps, and communications system.</li> <li>It may include maintenance requiring confined space entry and working at heights.</li> </ul>

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List	Certificate No
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	<b>Pre-Start</b>	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training and are competent to perform maintenance work.</li> <li>Confirm all staff are fully aware of the scope of work.</li> </ul>	
<input type="checkbox"/>	<b>Traffic and Pedestrian Control</b>	<ul style="list-style-type: none"> <li>Establish traffic control (cones, road signs), pedestrian control barriers and remove all possible trip hazards.</li> <li>Park truck strategically for maximum safety and operate hazard lights.</li> </ul>	
<input type="checkbox"/>	<b>Working at Heights</b>	<ul style="list-style-type: none"> <li>Risk assessment if working at 1.8 metres or more.</li> <li>Ladders checked and maintained in good condition.</li> </ul>	
<input type="checkbox"/>	<b>Site conditions</b>	<ul style="list-style-type: none"> <li>Confined space entry permit and procedures (if required).</li> <li>Check location of power lines if mobile crane is to be used.</li> </ul>	
	<b>Monitoring of Site Controls</b>	<ul style="list-style-type: none"> <li>Confirm all work permits have been completed.</li> <li>Ensure that PPE is being used and well maintained.</li> <li>Full sun protection required if working outdoors for longer than 15 mins.</li> <li>Wear safety boots, ear protection, gloves and high visibility clothing at all times.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Inspections</b>	<ul style="list-style-type: none"> <li>• Before work starts at each site a competent person or the Site Supervisor will make the following inspections and checks:</li> <li>• Visually inspect switchboard cabinet for signs of smoke or heat discolouration. NOTE: If it is suspected that the cabinet is “live” -</li> <li>• Do not touch, call for an electrician to test.</li> <li>• Check switchboard operational indicators (lamp test, security etc.)</li> <li>• Monthly: test the paging of high level alarm operation at each site.</li> </ul>
<input type="checkbox"/>	<b>Maintenance Steps</b>	<ul style="list-style-type: none"> <li>• Inspect buildings and structures for damage or vandalism (signage, wet well lids, locks, doors, broken lights, broken windows, radio antenna etc).</li> <li>• Check, test and re-set recording devices (alarm systems, Radio Telemetry Units, dial-in phone modems, data logger) and ink chart recorders.</li> <li>• Record power consumption, hours run, and flow meter readings, download data logger, if required.</li> <li>• Test run duty pump (switch pump controls from auto to manual and pump down wet well level to approximately 60%) and undertake checks as follows:</li> <li>• Visually inspect and listen to pump operation</li> <li>• Record amperage</li> <li>• Listen for unusual noises from pump or motor</li> <li>• Check for vibrations in pump or motor</li> <li>• Check for leaks in pump seals, valves and pipe-work</li> <li>• Repeat with standby pump (stop duty pump, select standby pump and pump down wet well level to approximately 30%)</li> <li>• Reset pump controls to auto (pump normally stops on low sewage level)</li> <li>• Check radio telemetry system antenna and battery back-up (test if required)</li> <li>• Check security and external lighting.</li> </ul>
<input type="checkbox"/>	<b>After work is completed</b>	<ul style="list-style-type: none"> <li>• Check amperage reading - if high check for pump blockage</li> <li>• Check weekly hours run reading - if high, check for pump blockage, worn pump impeller, wet weather I/I flows or new sewer connections.</li> <li>• Complete maintenance work sheet and return to Supervisor or office.</li> </ul>
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>• <b>This WMS has been reviewed for this particular procedure.</b></li> <li>• Date of review: ...../...../.....</li> </ul>

# WORK METHOD STATEMENT

## DRY WELL PUMP INSPECTION AND MAINTENANCE PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and/or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.

Council Details	
Council ABN	
Site Location	
Planned activity	<ul style="list-style-type: none"> <li>Pump maintenance inspection in dry well pump station.</li> <li>Tasks include checking pumps and switchboard.</li> <li>It may require confined space entry procedures.</li> </ul>

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List	Certificate No
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	Pre-Start	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training and are competent to perform maintenance work.</li> <li>Confirm scope of work is understood, all permits completed.</li> </ul>	
<input type="checkbox"/>	Site conditions	<ul style="list-style-type: none"> <li>Confined space entry permit and procedures (if required).</li> <li>Check location of power lines if mobile crane is to be used.</li> </ul>	
<input type="checkbox"/>	Safe lifting	<ul style="list-style-type: none"> <li>Use safe handling techniques, hoist or crane to lift any heavy equipment.</li> <li>Safety harness to be used by maintenance staff.</li> </ul>	
<input type="checkbox"/>	Other	<ul style="list-style-type: none"> <li>Check service instructions in manufacturer's handbook.</li> <li>This work requires mechanical trades competency.</li> </ul>	
	Monitoring of Site Controls	<ul style="list-style-type: none"> <li>Confined space, tagging and locking procedures required.</li> <li>Check all safety equipment, eg. harnesses, lifting tripod, lifelines etc</li> <li>Ensure that PPE is being used and maintained.</li> <li>Wear safety boots, ear protection, gloves and safety harness.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Inspections</b>	<ul style="list-style-type: none"> <li>• Before work starts at each site a competent person or the Site Supervisor will make the following inspections and checks:</li> <li>• Visually inspect switchboard cabinet for signs of smoke or heat discolouration. NOTE: If it is suspected that the cabinet is “live” -</li> <li>• Do not touch, call for an electrician to test.</li> <li>• Check switchboard operational indicators (lamp test, security etc.)</li> <li>• Monthly: test the paging of high level alarm operation at each site.</li> </ul>
<input type="checkbox"/>	<b>Maintenance Steps</b>	<ul style="list-style-type: none"> <li>• Set up for confined space entry.</li> <li>• Open all doors to ventilate the station or turn on dry well ventilation fan.</li> <li>• Before entering area check atmosphere with gas detector.</li> <li>• Set up crane and safety equipment (including tripod and harness).</li> <li>• Unlock switchboard and isolate standby pump</li> <li>• Turn off alarm, isolate and tag out circuit breaker on pump to be serviced.</li> <li>• Check for leaks at pumps, valves and pipe-work.</li> <li>• Flush water jacket (where applicable), remove and clean out all feeder lines.</li> <li>• Isolate and tag out inlet and outlet valves on pump to be serviced.</li> <li>• Disconnect power and using appropriate lifting equipment, lift out pump.</li> <li>• <b>Undertake checks as follows:</b></li> <li>• Inspect wear ring and record clearance.</li> <li>• Check mechanical seal and glands</li> <li>• Check alignment of shaft, couplings and ease of rotation.</li> <li>• Check for excess wear or corrosion of impeller and ease of rotation.</li> <li>• Check oil level, presence of water or metal particles; if necessary drain and refill.</li> <li>• Lubricate as required in accordance with manufacturer’s handbook.</li> <li>• Inspect pump casing for damage or unexpected wear.</li> <li>• Check that connections and supporting screws are tight.</li> <li>• Re-install pump, re-connect power, remove isolation tags, open valves and run pump in manual for a short period of time.</li> <li>• Check direction of rotation, bearing noise and vibration.</li> <li>• Check amps and switch to auto mode at isolator.</li> <li>• Inspect reflux valve components for wear and carry out water leak test.</li> </ul>
<input type="checkbox"/>	<b>After work is completed</b>	<ul style="list-style-type: none"> <li>• Report any faults to supervisor</li> <li>• Complete maintenance work sheet and return to Supervisor or office.</li> </ul>
<input type="checkbox"/>	<b>Review</b>	<p><b>This WMS has been reviewed for this particular procedure.</b></p> <p><b>Date of review:</b> ...../...../.....</p>

# WORK METHOD STATEMENT

## PUMP STATION INSPECTION AND CLEANING PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and / or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.

Council Details	
Council ABN	
Site Location	
Planned high risk activity	<ul style="list-style-type: none"> <li>General sewage pump station maintenance inspection and wet and dry well cleaning duties at sites located within roads or high traffic areas.</li> <li>Tasks include hosing of wet wells; observation of operational performance of pumps, switchboards, mowing and house keeping.</li> <li>It does not include maintenance requiring confined space entry.</li> </ul>

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	LIKELIHOOD	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List
ALMOST CERTAIN (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
LIKELY (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
POSSIBLE (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
UNLIKELY (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
RARE (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	Pre-Start	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training and are competent to perform maintenance work.</li> <li>Confirm all staff are fully aware of the scope of work.</li> </ul>	
<input type="checkbox"/>	Traffic Control	<ul style="list-style-type: none"> <li>Establish traffic control (cones, road signs), pedestrian control barriers and remove all possible trip hazards.</li> <li>Park truck strategically for maximum safety and operate hazard lights.</li> </ul>	
<input type="checkbox"/>	Pedestrian Control	<ul style="list-style-type: none"> <li>Establish and maintain pedestrian control barriers while wet well covers are removed for cleaning.</li> <li>Remove all possible trip hazards.</li> </ul>	
	Monitoring of Site Controls	<ul style="list-style-type: none"> <li>Confirm all work permits have been completed.</li> <li>Ensure that PPE is being used and first aid kit available.</li> <li>Full sun protection to be observed while working outdoors for longer than 15 minutes.</li> <li>Safety boots, gloves and high visibility clothing is to be worn at all times.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Inspections</b>	<ul style="list-style-type: none"> <li>• Before work starts at each site a competent person or the Site Supervisor will make the following inspections and checks:</li> <li>• Inspect buildings and structures for damage or vandalism (signage, wet well lids, broken lights, radio antenna etc).</li> <li>• Visually inspect switchboard cabinet for signs of smoke or heat discolouration. NOTE: If it is suspected that the cabinet is "live" -</li> <li>• Do Not Touch, call for an electrician to test.</li> <li>• Check switchboard operational indicators (lamp test, security etc.)</li> <li>• Test run pumps and check amperage (switch pump controls from auto to manual and pump down wet well level to approximately 50%).</li> <li>• Listen for abnormal noises or vibration during pump operation.</li> <li>• Reset pump control switch to auto (pump normally stops on low sewage level).</li> <li>• Monthly: test the paging of high level alarm operation at each site.</li> </ul>
<input type="checkbox"/>	<b>Maintenance Steps</b>	<ul style="list-style-type: none"> <li>• Tidy-up grounds, remove litter and mow grass if required.</li> <li>• Connect the hose to water tap and hose-down concrete/bitumen areas.</li> <li>• Open wet well lids.</li> <li>• Use hose and scraper to remove grease and fat and clean walls.</li> <li>• Clean screen grating or screenings bucket (if installed)</li> <li>• Scoop out any rags and floating material that could cause pump blockages and store in plastic bag for disposal at land-fill or sewage treatment plant.</li> <li>• Check level control devices - to ensure that fouling of these controls is not occurring</li> <li>• Hose clean level probes/ball floats and return to position ensuring free operation and no obstructions).</li> <li>• Clean and check well washer (if installed).</li> <li>• Close the wet well lids disconnect hose and store away.</li> </ul>
<input type="checkbox"/>	<b>After work is completed</b>	<ul style="list-style-type: none"> <li>• Record hours run and amp reading for each pump.</li> <li>• Ensure site is clean and tidy.</li> <li>• Complete maintenance work sheet and return to Supervisor or office.</li> </ul>
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>• <b>This WMS has been reviewed for this particular procedure.</b></li> <li>• Date of review: /...../.....</li> </ul>



# WORK METHOD STATEMENT

## WET WELL PUMP INSPECTION AND MAINTENANCE PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and/or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.

Council Details	
Council ABN	
Site Location	
Planned activity	<ul style="list-style-type: none"> <li>Pump station maintenance inspection in wet well located within roads or high traffic areas.</li> <li>Tasks include checking switchboard and pumps.</li> <li>It may include work requiring confined space entry.</li> </ul>

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List	Certificate No
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	<b>Pre-Start</b>	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training and are competent to perform maintenance work.</li> <li>Confirm all staff are fully aware of the scope of work.</li> </ul>	
<input type="checkbox"/>	<b>Traffic and Pedestrian Control</b>	<ul style="list-style-type: none"> <li>Establish traffic control (cones, road signs), pedestrian control barriers and remove all possible trip hazards.</li> <li>Park truck strategically for maximum safety and operate hazard lights.</li> </ul>	
<input type="checkbox"/>	<b>Safe lifting</b>	<ul style="list-style-type: none"> <li>Use safe handling techniques, hoist or crane to lift any heavy equipment.</li> </ul>	
<input type="checkbox"/>	<b>Site conditions</b>	<ul style="list-style-type: none"> <li>Confined space entry permit and procedures (if required).</li> <li>Check location of power lines if mobile crane is to be used.</li> </ul>	
	<b>Monitoring of Site Controls</b>	<ul style="list-style-type: none"> <li>Confirm all work permits have been completed.</li> <li>Ensure that PPE is being used and first aid kit available.</li> <li>Full sun protection required if working outdoors for longer than 15 mins.</li> <li>Wear safety boots, ear protection, gloves and high visibility clothing at all times.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Inspections</b>	<ul style="list-style-type: none"> <li>• Before work starts at each site a competent person or the Site Supervisor will make the following inspections and checks:</li> <li>• Visually inspect switchboard cabinet for signs of smoke or heat discolouration. NOTE: If it is suspected that the cabinet is "live" - <b>Do not touch, call for an electrician to test.</b></li> <li>• Check switchboard operational indicators (lamp test, security etc.)</li> <li>• Monthly: test the paging of high level alarm operation at each site.</li> </ul>
<input type="checkbox"/>	<b>Maintenance Steps</b>	<ul style="list-style-type: none"> <li>• Tag and isolate submersible pump to be inspected at switchboard and check correct isolation procedure by starting duty pump.</li> <li>• Using appropriate lifting equipment, lift pump out of wet well, set it on the ground and hose clean.</li> <li>• Close wet well lids, taking care not to trap or damage electrical cable.</li> <li>• Undertake checks as follows:</li> <li>• Check guide rails for corrosion, wear or damage.</li> <li>• Check condition of lifting chain, shackles, bridle and eye bolts.</li> <li>• Check for cable damage.</li> <li>• Flush water jacket (where applicable), check for leaks in pump seals.</li> <li>• Remove water jacket and clean out all feeder lines (where applicable).</li> <li>• Remove volute from pump and check volute face and pedestal hooks.</li> <li>• Inspect wear ring, record clearance, replace if necessary.</li> <li>• Place pump on its side and check impeller for undue wear or corrosion.</li> <li>• Inspect condition of impeller and manually check for free rotation.</li> <li>• Move impeller from side to side to check bearing clearances.</li> <li>• Pressure test seal chamber, check oil level and oil for contamination.</li> <li>• Drain and replace oil or top up to manufacturer's specifications.</li> <li>• Check that connections and supporting screws are tight.</li> <li>• Ensuring the pump is in a safe position, run in manual to check direction of rotation and listen to bearing noise.</li> <li>• Replace pump in well and test run, check amps and flow before switching to auto and removing isolation tag.</li> </ul>
<input type="checkbox"/>	<b>After work is completed</b>	<ul style="list-style-type: none"> <li>• Report any faults to supervisor</li> <li>• Complete maintenance work sheet and return to Supervisor or office.</li> </ul>
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>• <b>This WMS has been reviewed for this particular procedure.</b></li> <li>• Date of review: ...../...../.....</li> </ul>

# WORK METHOD STATEMENT

## PUMP STATION ELECTRICAL INSPECTION AND MAINTENANCE PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and/or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.

Council Details	
Council ABN	
Site Location	
<b>Planned activity</b>	<ul style="list-style-type: none"> <li>Electrical maintenance inspection in a dry well pump station.</li> <li>Tasks include checking pumps and switchboard.</li> <li>It may require confined space entry procedures.</li> </ul>

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	LIKELIHOOD	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	<b>Pre-Start</b>	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training - including switchboard rescue and CPR.</li> <li>Confirm scope of work with staff, complete all permits.</li> </ul>	
<input type="checkbox"/>	<b>Site conditions</b>	<ul style="list-style-type: none"> <li>Confined space entry permit and procedures (if required).</li> </ul>	
<input type="checkbox"/>	<b>Electrical Safety</b>	<ul style="list-style-type: none"> <li>Electrical and leads and tools tested every 6 months.</li> <li>Tag and lockout procedures.</li> <li>Residual currents in equipment components.</li> </ul>	
<input type="checkbox"/>	<b>Other</b>	<ul style="list-style-type: none"> <li>This work requires electrical trade certified competency.</li> </ul>	
	<b>Monitoring of Site Controls</b>	<ul style="list-style-type: none"> <li>All electrical leads insulated, kept dry and not a trip hazard.</li> <li>Tagging and locking procedures in place.</li> <li>Ensure all electrical safety measures been taken and PPE is being used.</li> <li>Wear safety boots, ear protection, gloves.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Switchboard</b>	<ul style="list-style-type: none"> <li>• Before work starts at each site an electrically qualified person will make the following inspections and checks:</li> <li>• Visually inspect the switchboard for defects such as blocked vents, dust, water, rusting, signs of smoke or heat discolouration cracked insulation, loose wires and insects.</li> <li>• Clean the cabinet and spray pesticide.</li> <li>• Check cable entry seals and reseal as required.</li> <li>• Identify hot spots or overheating components and check that all terminals are tightened.</li> <li>• Check all circuit breakers, fuses and isolating switches.</li> <li>• Check switchboard operational indicators (lamp test, security etc.)</li> </ul>
<input type="checkbox"/>	<b>Pump motor</b>	<ul style="list-style-type: none"> <li>• Turn off alarm, isolate and tag No 1 pump.</li> <li>• Measure the resistance across contactors.</li> <li>• Measure pump motor insulation (Mega Test) and record results.</li> <li>• Inspect motor cable connections and glands.</li> <li>• Check motor cooling fan.</li> <li>• Inspect cables for abrasion, cuts damage and swelling.</li> <li>• Check and clean motor starter.</li> <li>• Test emergency stop.</li> <li>• Check the condition of all labels and replace as required.</li> <li>• Return pump 1 to normal operation and record current draw.</li> </ul>
<input type="checkbox"/>	<b>General pump station checks</b>	<ul style="list-style-type: none"> <li>• All GPO's earth leakage.</li> <li>• All indicators and displays.</li> <li>• Building lights.</li> <li>• Battery back up power, chargers, surge protectors and solar panels.</li> </ul>
<input type="checkbox"/>	<b>After work is completed</b>	<ul style="list-style-type: none"> <li>• Report any faults to Supervisor</li> <li>• Complete maintenance work sheet and return to Supervisor or office.</li> </ul>
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>• <b>This WMS has been reviewed for this particular procedure.</b></li> <li>• Date of review: ...../...../.....</li> </ul>

# WORK METHOD STATEMENT

## PUMP STATION OVERFLOW PREVENTION PROCEDURE

Approved by	Name	Date	Signature
-------------	------	------	-----------

*All personnel conducting this work MUST be made aware of these methods of control at toolbox meetings and/or pre start meetings before work commences, with on-site enforcement by the Site Supervisor.*

Council Details	
Council ABN	
Site Location	
Planned activity	Measures to prevent sewer overflow from pump stations and clean up procedures if required. This will allow the system to be restored to normal operational status as quickly as possible and minimise the environmental impact of such occurrences.

### Risk Assessment

RISK ASSESSMENT	CONSEQUENCES					Prescribed Occupations	
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss	List	Certificate No
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	H-5	H-4	E-3	E-2	E-1		
<b>LIKELY</b> (Will probably occur at most times)	M-6	H-5	H-4	E-3	E-2		
<b>POSSIBLE</b> (Might occur at some time)	L-7	M-6	H-5	E-4	E-2		
<b>UNLIKELY</b> (Could occur at some time)	L-8	L-7	M-6	H-5	E-4		
<b>RARE</b> (May occur in rare circumstances)	L-9	L-8	M-7	H-6	E-5		

### Controls & Implementation

Tick	TASK HAZARD / RISK	METHOD OF CONTROL	Risk after Control
<input type="checkbox"/>	Pre-Start	<ul style="list-style-type: none"> <li>Ensure all persons have undertaken WH&amp;S induction and training and are competent to perform maintenance work.</li> <li>Confirm all staff are fully aware of the scope of work.</li> </ul>	
<input type="checkbox"/>	Cause of sewer overflow	<ul style="list-style-type: none"> <li>Increase in sewage flow due to stormwater entering the sewer by inflow and infiltration during wet weather.</li> <li>Power failure causing pump station to be out of service.</li> <li>Clogged screens, pump blockage or pump breakdown.</li> <li>Motor or electrical switchboard fault.</li> </ul>	
<input type="checkbox"/>	Risk minimisation and Prevention	<ul style="list-style-type: none"> <li>Inflow/Infiltration prevention program.</li> <li>Stand-by portable/mobile generator.</li> <li>Regular maintenance at pump stations and wet wells.</li> <li>Install spare pump and motor from depot/store.</li> <li>Early warning telemetry system.</li> </ul>	
	Monitoring of Site Controls	<ul style="list-style-type: none"> <li>Before visiting the site ensure health and safety risk have been noted.</li> <li>Assess weather conditions, e.g. severe electrical storm, cyclonic winds and flood conditions.</li> <li>Assess road conditions; establish traffic control, park truck strategically for maximum safety and operate hazard lights.</li> <li>Safety Boots (waterproof if required), boot top protectors, gloves and high visibility clothing is to be worn at all times.</li> </ul>	

Tick	TASK	PROCEDURE
<input type="checkbox"/>	<b>Preventive measures</b>	<ul style="list-style-type: none"> <li>• Inflow/infiltration program to stop entry of stormwater into sewers.</li> <li>• New building inspections - illegal rain water connections, overflow relief gullies/disconnector traps too low, swimming pool overflows.</li> <li>• Smoke and dye testing to identify illegal connections and damaged sewers.</li> <li>• Raise flood prone sewer manholes, seal covers (including wet wells).</li> <li>• Monitor dial alarm system/telemetry.</li> </ul>
<input type="checkbox"/>	<b>Maintenance Steps</b>	<ul style="list-style-type: none"> <li>• Respond to alarm and correct problem at pump station (timing is critical).</li> <li>• If fault cannot be corrected, request urgent help from M &amp; E contractors.</li> <li>• Turn off upstream pump stations if capacity is available in these systems.</li> <li>• Redirect the sewage flow to other pump stations, if possible.</li> <li>• Use a diesel pump to by-pass the pump station.</li> <li>• If pump station is likely to overflow, contact septic tank pump out services to attend the pump station and tanker sewage downstream or to STP.</li> <li>• Contain overflow if practicable, e.g. earthen embankment, sand bags.</li> </ul>
<input type="checkbox"/>	<b>Sewage spill clean-up</b>	<ul style="list-style-type: none"> <li>• Assess environmental, health and safety impacts of the overflow.</li> <li>• Where a private house needs to be entered, ensure that the resident is notified. Supervisor to take photographs of damage for insurance claims.</li> <li>• Undertake clean up actions as required.</li> <li>• All contaminated solid waste and materials are to be contained on site and then removed to an approved land disposal site.</li> <li>• If it is impracticable to remove all of the material, the contaminated area is to be adequately disinfected and left to dry for removal as soon as possible.</li> <li>• Operators are to leave the site in a clean and sanitized condition.</li> </ul>
<input type="checkbox"/>	<b>Incident reporting</b>	<ul style="list-style-type: none"> <li>• An environmental incident is an event such as a sewage overflow which could cause environmental harm or potential environmental harm.</li> <li>• It is a legal requirement that all environmental incidents must be reported - initially to the Manager and then to the EPA within 24 hours as follows:</li> <li>• Approximate volume of sewage overflow</li> <li>• Time and location</li> <li>• Actions proposed to prevent a re-occurrence</li> <li>• EPA 24 hour Pollution Hotline - 1300 130 372</li> </ul>
<input type="checkbox"/>	<b>Review</b>	<ul style="list-style-type: none"> <li>• <b>This WMS has been reviewed for this particular procedure.</b></li> <li>• Date of review: /...../.....</li> </ul>

RISK ASSESSMENT	CONSEQUENCES				
	INSIGNIFICANT NO INJURY or Low \$ cost	MINOR FIRST AID or Low-Med \$ loss	MODERATE MEDICAL TREATMENT Med-High \$ loss	MAJOR SERIOUS INJURY or Major \$ loss	CATASTROPHIC DEATH or Large \$ loss
<b>ALMOST CERTAIN</b> (Is expected to occur most times)	<b>H-5</b>	<b>H-4</b>	<b>E-3</b>	<b>E-2</b>	<b>E-1</b>
<b>LIKELY</b> (Will probably occur at most times)	<b>M-6</b>	<b>H-5</b>	<b>H-4</b>	<b>E-3</b>	<b>E-2</b>
<b>POSSIBLE</b> (Might occur at some time)	<b>L-7</b>	<b>M-6</b>	<b>H-5</b>	<b>E-4</b>	<b>E-2</b>
<b>UNLIKELY</b> (Could occur at some time)	<b>L-8</b>	<b>L-7</b>	<b>M-6</b>	<b>H-5</b>	<b>E-4</b>
<b>RARE</b> (May occur in rare circumstances)	<b>L-9</b>	<b>L-8</b>	<b>M-7</b>	<b>H-6</b>	<b>E-5</b>

# qld water



Institute of  
Public Works  
Engineering  
Australia  
Qld Division Inc



AUSTRALIAN  
WATER  
ASSOCIATION



[www.qldwater.com.au](http://www.qldwater.com.au)