Critical Control Handbook

A quick reference guide to controlling Seqwater's Fatality Risks.

Confined Spaces

Cranes & Lifting

Driving

Electricity

Excavation

Fire & Explosion

Hazardous Substances

Hazardous Energy

Mobile Plant

Violence

Working at Height

Working On, In or Near Water

Safe for Everyday, Always! Life!

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What are critical controls?

At Seqwater we have identified 12 risks that have the potential to cause a fatality. A Critical Control is a control related to one of these risks that is crucial to preventing this fatality occurring.

How to use this handbook?

This handbook is designed to be a communication tool which outlines the minimum set of safety controls for Seqwater's Fatality Risks.

When reviewing the Critical Controls in this handbook note that some critical controls will inform business decisions, such as the procurement of fit for purpose vehicles with 5*ANCAP safety rating, whereas others will need to be factored into planning for completing tasks on our worksite.

The critical controls identified in this handbook are applicable to everyone performing work for Seqwater, including our employees and contractors.

This handbook can be used to:

- Develop task specific risk assessments e.g. SWMS and Standard Operating Procedures.
- Review contractor's documentation to ensure minimum standards are included in their risk management documents.
- Support decision making and consistent application of our critical controls.

Further information

Fatality Risk		Procedure	Safe Work Method Statements	
	Confined Space	PRO-00443*	RSK-00471	
	Cranes and Lifting	PRO-00861*	RSK-00472	
	Driving	PRO-01864*	-	
	Electricity – HV Electricity – LV	PRO-00006*	RSK-00473 RSK-00474 RSK-00479	
	Excavation	PRO-00302*	RSK-00475	Combined SWMS in excel can be found here
	Fire and Explosion	PRO-01936*	-	
	Hazardous Energy	PRO-00014*	RSK-00476	RSK-00481 Combined Generic SWMS
	Hazardous Substance	PRO-00008* PRO-01752*	-	
	Mobile Plant	PRO-00867* PRO-01864*	RSK-00477	
	Violence	-	-	
	Working at heights	PRO-00015*	RSK-00478	
	Working on in or near water	PRO-00714* PRO-00865*	RSK-00480	

*Note: hyperlinks in the above table are for internal use only. External users to access procedures via www.seqwater.com.au

Confined Space

Critical Control – Confined Space	Objective	What could we expect to see?
Confined Spaces outside secure Seqwater sites are locked and/or secured against inadvertent or unauthorised entry	To prevent inadvertent / unauthorised entry to confined space	Confined Spaces outside a secure Seqwater site • Where structurally possible; lock, bolted flange or gatic lid is place • Uniquely tooled cover • Confined Space signage • No damage to locks/chains/grating/ access points Confined Spaces inside a secure Seqwater site • Secure site / perimeter • Locked gates, fences and doors • No damage to locks/chains/grating/ access points • Confined Space Signage • Barricaded work area
A safe atmosphere is verified prior to Confined Space entry and continuously monitored with calibrated equipment	To maintain a safe atmosphere in confined spaces where workers are present.	• No Seqwater workers in Confined Spaces with unsafe atmospheres • Seqwater workers can describe that only expert external contractors are permitted to enter a Confined Space with an unsafe atmosphere, with appropriate controls • Gas monitor verified by; visual inspection, fresh air test and bump testing • Calibration test tag in date • Testing results included on CS entry permit • Peak readings / Data logs on monitoring equipment confirm gas test results within defined safe range • Continuous atmospheric monitoring occurring for the duration of the entry • Forced ventilation where natural ventilation insufficient • Entrant numbers limited to align with size of space • Space drained, cleaned or purged prior to entry
Isolation of all gases, liquids and solids with potential to enter the Confined Space	To prevent introduction of gases, liquids or solids into confined spaces where workers are present	• Approved Isolation instruction • Isolation hardware / lock board / locks & tags in place • All energy sources de-energised and tested for dead (e.g. pipes usually filled with a substance that could flow into the space are drained down and confirmed empty, flow out of the scour valve ceases) • Workers in the confined space match the confined space permit and Isolation instruction • Number of persons in confined space matches locks and signatures • Inspection to verify adequate condition of any valves preventing ingress of substances into the space prior to confined space entry • Valve Caps (colour) indicating valve position
Rescue worker from unsafe conditions in a confined space	To safely and efficiently remove workers from the confined space in the event of an emergency	Seqwater workers can only conduct a Confined Space retrieval rescue where; • at the Confined Space entrance, a single worker can execute a vertical rescue via winch without obstruction • there is only entrant with continuous connection to rescue harness • additional Confined Space trained worker/s on site are made aware and able to assist within 2 minutes of identified emergency (where the entry team is less than 3) • High Risk rescue plan documented and rehearsed Specialist Confined Space rescue contractor must be engaged to conduct Confined Space rescue where; • The above conditions cannot be met

Critical Control – Cranes & Lifting	Objective	What could we expect to see?
The maximum rated Working Load Limit (WLL) of Cranes & Lifting equipment is not exceeded	To prevent a mechanical failure and resulting loss of control of load or crane/lifting equipment	• Operator discussion of capacity at reach distance • Load chart (digital or hardcopy) • Lift plan • Ground conditions and slope accounted for • Load specifications • Rated equipment in test date • WLL displayed and legible on the lifting equipment • Fit for purpose crane / lifting equipment • Safety alarms are complied with • Safety devices / movement limiting devices are never tampered with or overridden
Cranes are not operated when wind speed exceeds 10m /second (36km/hr)	To prevent operation of a crane in high wind and resulting loss of control of load or crane	• Wind speed is verified as less than 10m/s (36km/hr) (anemometer or internal crane instrument)
Ground conditions and/or outrigger pads supply suitable footing for cranes and mobile plant involved in lifting operations	To prevent operation of a crane on unstable ground and resulting loss of control of load or crane	• Assessment of conditions performed prior to lift • Where the ground condition is identified to have a risk of collapse or displacement, an engineer has been engaged to assess and confirm that the ground conditions are suitable for the crane. • Checks for ground undermining and location of underground pits, excavations nearby, water on the ground, pipelines, signs of work/fill or sustained lifts. • Discussion with operator • Test lift • Outrigger legs extended to maximum • Locking pins in place • Foot over the centre of pads • No damage to legs / dunnage
Loads must be rigged, lifted, suspended and moved in a way that ensures that the load remains under control at all times	To prevent the suspended load from falling or shifting	• Positive communication maintained between the Crane Operator and person/s in control of the load • Rated and certified equipment in test date • Tag line being used • Test lift • No slings around sharp corners • Reeve angle less than 120 degrees • Double wrapped chain on metal load • No frayed slings, ropes. • No stretched chains • Hooks around the right way • Clear / planned Lift path for pick and carry operations • Slinging methods used manage any expected dynamic load forces (e.g. wind or sudden crane halt). • Positive communication maintained between the Crane Operator and person/s in control of the load (visual, vocal, radio, whistle) • Positive communication maintained with relevant spotters. i.e. Overhead powerline spotter) • Control levers locked out whilst the crane is not operating • Operator remains at controls during lift execution • All workers involved in the lift are undistracted by mobile phones or electronic devices

All loads must be landed onto an adequate load bearing surface and fundamentally stable before unslinging	To prevent a landed load from movement post lift.	• Load remains slung until stability verified • Hold down straps on items that could roll • Chocks, side bracing in place to hold load • Equipment in place, load destination planned • Even, stable landing pad • Scaffold not overloaded • Consideration of capacity of load bearing surface • Where secondary containment is used internal objects have been secured against movement in transit to prevent uncontrolled movement when the containment is opened.
No Persons in the firing line of mobile Plant	To prevent interaction between mobile plant and workers	**Precautions with pick and carry cranes;** • Where possible; tag line(s) tied to the front of the crane to eliminate the need for the dogger to hold the end of the tag line. • The dogger is not in the travel path of the crane or between the crane and the suspended load. • The crane operator stops the crane if he or she loses site of the dogger" **Cranes and mobile plant used for lifting activities;** • Well maintained clear areas where mobile plant is used • Well defined marking / delineation of permanent exclusion zones e.g. walkways and pedestrian crossings • Temporary mobile plant exclusion zones clearly delineated • Mobile Plant Spotter where required • No persons within 3m of operating mobile plant • Blind spots and crush zones identified in the Traffic Management Plan (TMP) • Convex mirrors on blind corners / Signage in place • Spotter in place using positive communication with the machine operator • Bucket grounded and controls de-activated before person enters the slew radius exclusion zone • Only authorised person in the slew radius exclusion zone during operation to direct small accurate movements of a load
Cranes that use a workbox to elevate people have anti-free fall device or secondary independent brake on all winches	To prevent rapid, uncontrolled descent to ground of a workbox elevating people.	• Anti-free fall device / secondary independent brake installed on all winches • Maintenance records up to date for the secondary brake Critical Lift Plan • Operator description of derated capacity when using a workbox
No persons positioned under a suspended load	To prevent a person being struck by a falling or suspended load	• No persons observed under a suspended load • Operating cranes are not slewing over populated areas • Lift path is clear of populated areas e.g. admin buildings / control rooms • Exclusion zones are visible, well defined, controlled and maintained • Barricades have considered load bounce / spillage or rolling load • Demarcation of exclusion zones • Signage • Spotter
Emergency Services assistance	To minimise the impact to human life from an overturned crane or loss of load control.	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm • First aid kits, trained workers in place and available

Driving

Critical Control – Driving	Objective	What could we expect to see?
Fit for purpose vehicles for task	To prevent the use of vehicles and mobile plant in unsuitable conditions	• Procurement specifications in place on vehicle • No unauthorised modifications • No overloaded vehicles / plant • No using a 2WD instead of 4WD • No bypass of safety devices • No loose objects in vehicle cabin • Items fitted to identified vehicles as per procurement specifications • All Seqwater vehicles have 5 star ANCAP rating • Functional protections fitted to identified vehicles e.g. ABS, ROPS, FOPS, Bull bars
Drivers to drive to conditions dictated by load, road, weather, time of day and speed limits.	To ensure drivers comply with road rules and consider dynamic conditions that may affect operation of vehicles	• Licenced driver • Driver not using hand held mobile phone • Compliance with road rules / speed limits • Driver / custodian can describe their obligations e.g. driving to conditions, Alcohol and other drugs, slowing down for hazards, avoiding or changing travel plans, effect of loads and trailers on vehicle performance, Seqwater policies and procedures
Loads are restrained, positioned and within mass limits in accordance with the Department of Traffic and Main Roads (DTMR) restraining laws	To prevent the loss of control of a load	• Mass limits displayed • Rated tie down equipment • Load distribution (e.g. loads over axle and not front or rear heavy) • Correct loading and restraint techniques used • Loads covered • Weigh bridge record • No loose objects in driving cabin • Objects stored behind cargo barriers or in Ute trays / toolboxes / boots
No vehicles to drive on a submerged road (unless authorised)	To prevent vehicles being inundated and swept away by moving water	• No persons driving over submerged roads unless: – the depth of water is less than 150 mm (around the height of the tyre of the vehicle) and – the water is still, or the flow is less than 0.5 m/s and – the end of the crossing is visible and there are no signs of erosion or instability of the road base and – there is no potential for a sudden increase in the depth or velocity of water • Assessment conducted / exemption form • Drivers not crossing submerged roads • Selection and use of fit for purpose vehicles • High clearance, 4WD vehicles in use to cross water bodies • No small 2WD's crossing water
No persons 'in the firing line' of vehicles	To prevent interaction between pedestrians and vehicles	• All persons are well clear of moving vehicles • People using the walkways and crossing (no shortcutting / worn short cut paths) • Well defined marking / delineation of permanent exclusion zones e.g. walkways, pedestrian crossings and barriers • Physical barriers in place (of adequate strength / structure) • Blind spots and crush zones identified in the Traffic Management Plan (TMP) • Convex mirrors on blind corners / Signage in place • Traffic Management Plant for site • Site speed limit • Minimise exposure of workers to proximity of public roadways when accessing work areas

Emergency Services assistance	To minimise the impact of interaction with vehicles and mobile plant on human life	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm • First aid kits, trained workers in place and available • Glass hammer / seat belt cutter • Journey logged in the journey management system • Welfare check and escalation after 2hrs of no contact • NRC report • Call out data matches IVMS and NRC
In Vehicle Management System (IVMS) is fully functional (Seqwater vehicles only) e.g. roll over alert, head on / major collision alert	To prevent delayed emergency response	• NRC reports • Fleet team verifies full functionality of IVMS e.g. roll over alert, head on / major collision alert (potential for NRC to monitor and forward / escalate alerts)
Seat Belts must be worn when operating a vehicle	To restrain drivers and passengers in the event of sudden uncontrolled movement	• All drivers and passengers wearing seat belts • No seat belts tampered with / damaged • No safety devices overridden • IVMS indicates seat belt worn when vehicle in motion

Electricity – High Voltage

Critical Control – Electricity HV	Objective	What could we expect to see?
Seqwater personnel are not permitted to perform live high voltage work	To prevent Seqwater workers working on Seqwater's live HV equipment / assets e.g. Energex live line work	• No Seqwater workers performing live HV work • HV work is carried out on de-energised equipment unless working live is – necessary in the interest of health and safety – necessary in order for the work to be carried out properly and; – there is no reasonable alternative to carrying out the work • Specialist HV contractors working on Seqwater's live HV equipment / assets e.g. live line work (Energex)
Remote switching	To prevent a worker being in close proximity to a HV arc flash or blast during switching activities	• Remote switching is occurring • Switching sheet **If switching is not remote** • Is there an opportunity to introduce it? • Has approach distance been considered and actioned? • SWMS documents approach distance controls • The HV switching assistant is as far away as practicable from the operator • The switching assistant is on the hinged side of the cabinet door (if practicable) • Remote switching where practicable • Identified opportunities to implement remote switching • Ideal future state of all switching done remotely
Rated electrical PPE is donned and in good condition	To mitigate the effects of exposure to LV/HV electricity and arc flash/blast	• CAT 4 bomb suit in test date and in good condition • Rated arc flash gloves in test date and in good condition • Electrically rated safety boots • Rated Gloves insulated to the highest potential voltage expected for the work to be undertaken in test date and in good condition (if test for dead not occurring check gloves are stored in a manner to prevent damage) • PPE is in date, tested and inspected to verify good condition
Locked area (room / yard / enclosure) where HV equipment is contained	Prevent unauthorised persons from accessing live parts	• SHV locks in place • SHV process in place to limit access of SHV keys to approved and competent HV operators • Signage and yard fencing in place • Pad mounted transformer / RMU locked but not mandatorily fenced
Isolation of all electrical sources of energy	To ensure all sources of electrical energy have been de-energised, and positively isolated	**Isolation** • Accurate (verified) single line drawing • Simple isolation instructions on SWMS • Complex and tiered isolations are approved by an authorised isolator and documented • Valves, switches, handles, doors, circuit breakers, cabinets etc locked in position defined in isolation instructions, with isolation hardware, padlocks and tags in place • The number of locks described in the isolation instruction matches the number of locks used in practice • Castel Key system in place **Test for dead** • Job plan / Isolation Instruction / P&ID / SWMS • Defined process followed to test that isolations are effective and all sources of stored energy have been dissipated • Attempt made to start or operate isolated plant or equipment. • Electrical circuits confirmed de-energised by calibrated, serviced and functional testing equipment • Time allowance for Electrical components with stored energy to discharge. • HV switchboards / equipment only opened when isolated, locked, confirmed de-energised and earthed.

Isolation cont.:		**Secondary power sources verified as de-energised by testing** • HV switching sheet signed off • Operator discussion of Test for dead for AC and DC voltages incl phase to earth • Discharge time considered for capacitors (e.g. 10-30min) • Signage for long discharge times • Drawings (single line) • Mechanical isolations in place for back feed potential • Operator discussion of Testing neutral for potential • Signage indicating secondary power supply **Earthing of HV parts** • access permit shows location and number of earths • visual confirmation of applied earths (fixed or portable) • earths signed off on switching sheet • operator description of methodology used to identify parts to be earthed (e.g. portable earths)
Locked switchboard where live parts or public location	Prevent unauthorised persons from accessing live parts	• Locked switchboards in public areas • Unlocked switchboards in public have a worker in attendance • Locked switchboards with live parts • Open unattended switchboards verified as de-energised • Worker in close proximity to open live switchboards (LV)
No unauthorised person, plant or equipment is permitted to enter an overhead power exclusion zone	To prevent person, plant or equipment arcing or contacting with live overhead powerlines	• No person, plant or equipment closer than 3m to overhead power lines • documented deviation approval • documented consultation with the overhead line owner • SWMS detailing verified controls if reduced exclusion zone approved e.g. authorised spotter, movement limiters, proximity alarms • Trained spotter (instructed person) in place to prevent people or equipment entering overhead power exclusion zones • Authorised person in place • Communication demonstrated as effective **If entry by deviation has occurred;** • Overhead power line isolation instruction and Energy Tag and Lockout in place **OR** • Isolation of overhead power has been assessed and documented prior to entry to an exclusion zone Further controls in place to prevent worker contact with overhead electrical service
Effective earthing / equipotential bonding	To ensure protective devices operate correctly	• Residual Current Device (RCD) label in date, RCD records • Main Earth Neutral link in place • Electrical testing results (test sheets) • Equipotential bonding in place • RPEQ sign off

Emergency Services assistance	To minimise the impact of exposure to electrical energy on human life	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm • High risk rescue plan developed and rehearsed • HV rescue plan identifies the upstream isolation and earth points • First Aid resources • Spotter / 2nd person for rescue when identified by risk assessment • Effective communication for raising the alarm • Rescue plan details barricading, its availability and deployment. • Rescue plan details spotter and their responsibilities • Ability to remote switch for emergency isolation • Ability Isolate power to stop creation of fumes / arcing products

Electricity – Low Voltage

Critical Control – Electricity LV	Objective	What could we expect to see?
Rated electrical PPE is donned and in good condition	To mitigate the effects of exposure to LV/HV electricity and arc flash/blast	• PPE is in date, tested and inspected to verify good condition • Rated Gloves insulated to the highest potential voltage expected for the work to be undertaken, flame retardant clothing, face shield with chin strap, non-conductive footwear • PPE for LV arc flash / blast • Other potential PPE e.g. flame retardant clothing, face shield with chin strap, non-conductive footwear.
Isolation of all electrical sources of energy	To ensure all sources of electrical energy have been de-energised, and positively isolated	**Isolation** • Accurate (verified) single line drawing • Simple isolation instructions on SWMS • Complex and tiered isolations are approved by an authorised isolator and documented • Valves, switches, handles, doors, circuit breakers, cabinets etc locked in position defined in isolation instructions, with isolation hardware, padlocks and tags in place • The number of locks described in the isolation instruction matches the number of locks used in practice • Castel Key system in place **Test for dead** • Job plan / Isolation Instruction / P&ID / SWMS • Defined process followed to test that isolations are effective and all sources of stored energy have been dissipated • Attempt made to start or operate isolated plant or equipment. • Electrical circuits confirmed de-energised by calibrated, serviced and functional testing equipment • Time allowance for Electrical components with stored energy to discharge.
Isolation cont.:		**Secondary LV sources been identified and isolated to prevent back feed** • Secondary LV sources have been considered • Isolation instruction includes LV switch open • Isolated VT circuits (if applicable) • HV switching sheet identifies LV back feed • LV switch verified as locked open • Drawings **Items of faulty or damaged plant / equipment isolated, locked and tagged 'Out of Service' (and earthed if HV)** • Faulty electrical equipment is 'made safe'; de-energised, isolated, locked and earthed (if HV) before taken out of service. • Details of who holds the out of service lock key and the reason the plant has been placed out of service are recorded on the yellow out of service tag • Out of service lock key is stored in a relevant control room / maintenance depot with an information tag attached recording the contact details of the worker who placed the item of plant out of service and to identify the plant that is out of service and the reason that the plant is out of service.
Locked switchboard where live parts or public location	Prevent unauthorised persons from accessing live parts	• Locked switchboards in public areas • Unlocked switchboards in public have a worker in attendance • Locked switchboards with live parts • Open unattended switchboards verified as de-energised Worker in close proximity to open live switchboards (LV)

No unauthorised person, plant or equipment is permitted to enter an overhead power exclusion zone	To prevent person, plant or equipment arcing or contacting with live overhead powerlines	• No person, plant or equipment closer than 3m to overhead power lines • documented deviation approval • documented consultation with the overhead line owner • SWMS detailing verified controls if reduced exclusion zone approved e.g. authorised spotter, movement limiters, proximity alarms • Trained spotter (instructed person) in place to prevent people or equipment entering overhead power exclusion zones • Authorised person in place • Communication demonstrated as effective **If entry by deviation has occurred:** • Overhead power line isolation instruction and Energy Tag and Lockout in place **OR** • Isolation of overhead power has been assessed and documented prior to entry to an exclusion zone • Further controls in place to prevent worker contact with overhead electrical service
Effective earthing / equipotential bonding	To ensure protective devices operate correctly	• Residual Current Device (RCD) label in date, RCD records • Main Earth Neutral link in place • Electrical testing results (test sheets) • Equipotential bonding in place • RPEQ sign off
LV Rescue	To remove a worker exposed to LV from continued exposure to live electricity.	• High Risk rescue plan identifies the upstream isolation and earth points • LV emergency isolation point been identified, agreed and labelled with 'Danger isolate here' signage? • LV rescue kit and mat in place • First Aid resources • Spotter / 2nd person for LV rescue when identified by risk assessment • Effective communication for raising the alarm • Rescue plan details barricading, its availability and deployment. • Rescue plan details spotter and their responsibilities • Ability to remote switch for emergency isolation • Ability Isolate power to stop creation of fumes / arcing products
Emergency Services assistance	To minimise the impact of exposure to electrical energy on human life	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm
Portable electrical equipment and leads must be in good condition, tested and tagged, fit for purpose and protected from exposure to water unless specifically rated for that purpose	To prevent the use of damaged / faulty or non-protected portable electrical equipment	• Extension lead and equipment tested, tagged and in good condition • Hanging poles / stands for leads off ground • No leads / equipment in water unless it has relevant IP rating • RCD power pack (tested / tagged) in place • Wet weather / submersible electrical equipment in use in wet conditions

Residual Current Device (RCD)	To mitigate the effects of exposure to LV electricity	• RCD sticker detailing push button test date • RCD records detailing injection testing results • All portable electrical equipment is protected by an RCD (fixed or portable) • All GPO circuits and lighting circuits have RCD protection • Fixed wiring below 32 amps is assessed to identify if RCD protection required

Excavation

Critical Control – Excavation	Objective	What could we expect to see?
Barricading of excavations that create a fall risk >1.5m	To prevent a person from falling into an open excavation	• If excavation creates a fall risk of more than 1.5 metres, either hard barricading on the edge of excavation OR soft barricading at least 2 metres from the edge of the excavation • Barriers at the edge of an excavation should be able to withstand the force of a person walking into or falling against it. • All excavations should be backfilled overnight where practicable, if not practicable, hard barricading (i.e. fencing, suitable trafficable plates) is fixed in place to stop people accessing the excavation • sign(s) that say "DANGER DEEP" Excavation that warn people approaching the excavation • No person putting themselves at risk of falling more than 1.5 metres (including spotters)
Excavations >1.5m are benched, battered, shored or verified stable by RPEQ engineer	To prevent excavation collapse	• 1:1 benching (not exceeding 1,5m) • 45 degree battering • Shoring device in place • Registered Professional Engineer Queensland (RPEQ) written approval confirming excavation stability
Positively identify all services within planned excavation area.	To prevent mechanical disturbance of known and unknown underground services	• If the entire panned excavation is 'vacuum excavation' service location activities can consist of local knowledge inspection and discussion on whether sandwich construction PVC electrical conduit is potentially present. • Approved Excavation permit in place • Proof of dial before you dig within the 28 days prior of the commencement of the excavation • Physical inspection of the planned excavation site and surrounding area has been conducted to identify any visual indicators of buried services • Within 5m of the planned excavation • GPR and / or EMF (cable locator) used to verify location of all known services **Within 5m of the planned excavation (Report and drawings available)** • Spray paint on ground (colour coded) indicating where service is; depth, direction and Mechanical No Dig Zone • Pot hole markers every 5 metres (depth and direction) **Within 300mm of the planned excavation** • Any service encroaching within 300 mm of the planned excavation must be visually verified by potholing (vacuum excavation or hand digging). • Pot hole markers every 3 metres (depth and direction) **Further precautions inside the boundary of a WTP / Network site** • GPR of entire planned excavation and; • Slit trench has been vacuum excavated around the perimeter to the depth of the excavation OR Perimeter slit trench has been attempted and conditions not practicable to proceed (permit hold point exemption approved by engaging officer's supervisor) • Extra precautions assessed and documented during planning phase if digging deeper than initial slit trench (e.g. further slit trench or GPR/EMF (cable locator) OR Further perimeter slit trenching has been attempted and conditions not practicable to proceed (permit hold point exemption approved by engaging officer's supervisor) **Activities exempt from 'further precautions inside the boundary of a WTP / Network site'** • Piling • Core Samples • **Note** these activities are not exempt from all initial service location requirements

Isolate all identified HV electrical services with potential to encroach within 500mm of the planned excavation	To de-energise identified HV, hazardous substance and high pressure services within the planned excavation	• Completed Isolation instruction for HV electrical services within 500mm of planned excavation • Energy Tag and Lockout hardware in place • Approved exemption for non-isolated HV (Voltages in excess of 1000 volts AC or 1500 volts ripple-free DC)
Pressure and volume assessments conducted prior to workers entering excavations with a potential for water ingress	To prevent worker exposure to high pressure or volume of ingressing water	• Completed calculations assessing the speed at which the excavation may fill with water. • Completed calculations assessing the pressure of water a worker may be expose to given the failure modes of a service • Precautionary controls implemented based on failure assessment; e.g. worker continuously attached to retrieval equipment
Minimum separation distances are maintained from all underground services	To prevent contact with known services within the planned excavation	• 500mm separation from known live High Voltage services • 300mm separation from all other services • A dedicated spotter is in place for all mechanical excavation on a brownfield site (Scrapping sediment/sludge is exempt) • 300/500mm delineation marking lines both sides centre of service (demarcation of no dig zone) • Where practicable, maintain a 300mm separation distance between high pressure (>=2000psi) water blasting devices and; – PVC electrical conduits – stop work if orange PVC discolours, turns white or becomes damaged – Asbestos Containing Pipes – Pipes and services wrapped or coated with Asbestos Containing Material”
Heavy loads and machinery are stable and positioned outside the ‘zone of influence’ of the excavation	To prevent loads or machines falling into an excavation	• 'Zone of influence' as defined by Excavation Work Code of Practice 2013 (Qld) where the minimum set back distance at least be equal to the depth of the unsupported excavation/trench wall • No loads on zone of influence unless a shoring box is in place • Battered sides of trenches and excavations • Machines tracks should not be on the zone of influence unless orientated 90 degrees to the edge • Excavations are clear of persons when there is risk of plant or loads falling into the excavation (no persons in the line of fire) • Machines are chocked or fundamentally stable • Loads are chocked or at a safe distance from edges
No persons "In the firing line" of mobile plant	To prevent mobile plant from striking a person	• Well maintained clear areas where mobile plant is used • Well defined marking / delineation of permanent exclusion zones e.g. walkways and pedestrian crossings • Mobile Plant Spotter where required • No persons within 3m of operating mobile plant • blind spots and crush zones identified in the TMP • convex mirrors on blind corners • Spotter in place using positive communication with the machine operator • Bucket grounded and control de-activated before person enters the slew radius exclusion zone • No person in the slew radius exclusion zone during operation • Exemption for workers protected by the sides/wall of a trench or excavation • Persons positioned in an excavation/trench must adopt a position of safety clear of operating machines
Emergency Services assistance	To mitigate the impact on human life of exposure to unsafe conditions during excavation and trenching works	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm
Remove worker from unsafe conditions in an excavation	To mitigate the impact on human life of exposure to unsafe conditions during excavation and trenching works	• Workers can describe the rescue plan and their role e.g. spotters know to; not to enter excavation for rescue, prevent unauthorised rescuers and raise the alarm in case of ingress of water • High risk rescue plan in place for workers entering an excavation deeper than 1.5m

		• Spotter in place at ground level to monitor the safety of all persons in excavations >1.5m • Rescue equipment in place (as per the rescue plan) e.g. davit arms on shoring box, ladders every 9m. • First aid resources and first aid trained workers in place • Ability to rapidly disconnect work lead • Ability to egress excavation rapidly

Critical Control – Fire and Explosion	Objective	What could we expect to see?
Retreat from / do not enter the areas of excessive heat and smoke	To prevent exposure to fire/heat beyond PPE capabilities	• Safety zone / smoke refuge in place • Noxious / thick smoke and low visibility triggers retreat • Effective comms in place • Incident controllers and sector leaders giving clear instructions • RPE breakthrough (smell) may trigger retreat • No frontal attack; flank only • Radiant heat triggers retreat • IC SL issuing clear instructions • Identified Safety Zones e.g. Fire breaks, fuel reduced area, previously burned, vehicle refuge • Updated maps of the area • Pre-activity briefing • Blacked out areas (pre burnt areas) • People are using safety zones (e.g. working off the fire break) Maintenance of fire breaks • Clear / effective refuge area identified for regroup / evacuation • Fire breaks prepped and checked for hazardous trees
Radio Communication	To update workers on conditions and provide emergency instructions	• Operable GWN radio OR interoperable radio for inter-agency (QWPS) tasks • Radio in vehicle • One portable radio per crew of two
Firefighting PPE / RPE is fit for purpose, donned and in good condition	To create a protective barrier between the worker and excessive fire, heat and smoke	• RPE/PPE clean and in serviceable condition and within defined expiration date (where applicable) • RPE and PPE donned correctly • RPE either loose fitting P2 wrap or tight-fitting half face full face cartridge mask • If the worker is voluntarily wearing tight-fitting RPE (not mandated), they must have passed a current fit-test (< 12 months ago) and not have any facial hair where the mask seal meets the face • Rated hi visibility clothing, fire rated helmet with face shield, fire rated boots / gloves • Under garments for radiant heat protection • RPE/PPE stored to prevent damage and prolong effectiveness • Critical spares available • A/S type 3 bush firefighting helmet (wildland AS for firefighting) and visor and in good condition • Fully serviceable (parts replaced if required) • Chin straps secured • Spare helmets available
No workers in the firing line of high risk trees	To prevent trees from falling on workers	• All persons are clear of identified 'high risk' trees **Where practicable:** • 'high risk' tree assessment has occurred • Prepped base of high risk trees / habitat trees • Removal of high risk trees where identified • Burn away from high risk / habitat trees • Stop personnel from entering high risk tree fall zones • Delineation, Flagging • Flagging tape on identified hazardous / habitat trees • No one in the drop zone of high risk trees • No lingering in proximity of flagged trees • Flagging colour protocols

Critical Control – Fire and Explosion	Objective	What could we expect to see?
No persons in the firing line of mobile plant	To prevent interactions between people and plant	• Engaged contractor for mobile plant to include allocated spotter and escort vehicle (for refuge) • Mobile plant and escort vehicle to be equipped with fire blanket • Spotter and mobile plant operator to don minimum PPE; fire rated hi-vis clothing and type 3 helmet. • Mobile plant operator and spotter to have minimum 1 GWN radio • Undistracted spotter mobile phone use during operation • Audible reverse alarms on all mobile plant i.e. bull dozers
Delineated 'hazardous areas' (explosive atmospheres) ventilated and fitted with compliant IP rated equipment	To identify potentially explosive atmospheres and prevent ignition sources therein	• 'Hazardous Area' dossier in place • Signage 'hazardous area' in place • Site security • Identified in site WHS hazard register • Use of only intrinsically safe electrical equipment in 'hazardous areas' • No ignition source taken within 3m of an explosive 'hazardous area' • Pre-entry drop box for mobile phones, watches and all other electronic devices • CAT 4 PPE worn by all electrical workers in hazardous areas
Fit for purpose fire vehicle	To ensure vehicles have all identified capabilities	• Specifications for identified fire vehicles in identified areas observed in place and effective • Examples of specifications may include (not exhaustive or mandatory); • Removable fuel containers on designated fire vehicles • Vehicle mounted overhead lights flashing on the fire ground • Standardised configuration front indicators and front and rear bombers (as per fire vehicle fleet specs) • Falling Object Protection (FOPS) • Roll over protection (ROPS)
Emergency Services assistance	To mitigate the effects of exposure to excessive heat, smoke or falling / moving objects	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm

Critical Control – Hazardous Energy	Objective	What could we expect to see?
Guarding and screens e.g. permanently fixed, interlocked, or self-closing	To prevent a worker contacting moving parts of operating fixed plant / equipment	• Guard, screen or barrier observed in place, adequate and functional • Compliance with manufacturer's instructions • Compliance with AS 4024 for new plant • Interlocks observed and tested to verify functionality • Maintenance records • Signage highlighting the hazard • Guards must effectively keep all body parts away from harmful energy • Fixed guarding is not removed until approved isolation instructions are in place • Where rotating/moving parts are unguarded (e.g. lathe, drill press); – hands and body parts are kept clear from entanglement. – clothing is snug (not loose) and kept clear from entanglement
Isolation	To prevent de-energised fixed plant / equipment from becoming energised or inadvertently operated	• SCADA, control circuits or E-stops must not be used as a method of isolation • Simple isolation instructions on SWMS • Complex and tiered isolations are approved by an authorised isolator and documented • Job plan / Isolation Instruction / P&ID / SWMS • Valves, switches, handles, doors, circuit breakers, cabinets etc locked in position as defined in isolation instructions • Valve Caps (position, arrow and/or colour) indicating valve position • The number of locks described in the isolation instruction matches the number of locks used in practice • Other isolation hardware locked in position such as bulkhead, blanking plate, penstock with isolation hardware, padlocks and tags in place • Plant or equipment with gravitational potential is chocked or restrained including a secondary fail safe e.g. pin and chock / handbrake and chock. • Pipes, vessels, tanks verified as drained and/or de-pressurised • Equipment normally under load or tension verified as de-energised e.g. relaxed springs /cams or struts • Gravitational potential of plant or equipment is dissipated, e.g. excavator buckets lowered to ground, mobile plant parked up on flat ground, hoisted loads lowered to ground • Time allowance for Electrical components with stored energy to discharge. • Defined process followed to test that isolations are effective and all sources of stored energy have been dissipated • Attempt made to start or operate isolated plant or equipment. • Electrical circuits confirmed de-energised by calibrated, serviced and functional testing equipment • Flows have ceased from drain or scour valves • Gauges / meters showing dissipated energy e.g. hydraulic or pneumatic • Fixed guarding is not removed until approved isolation instructions are in place • Item of plant 'made safe' before taken out of service • Details of who holds the out of service lock key and the reason the plant has been placed out of service are recorded on the yellow out of service tag • Out of service lock key is stored in a relevant control room / maintenance depot with an information tag attached recording the contact details of the worker who placed the item of plant out of service and to identify the plant that is out of service and the reason that the plant is out of service.

Exclusion zone	To prevent a worker entering an area where moving parts of operating plant or ejected parts of failed plant may strike them.	• Exclusion zones are visible, well defined, controlled and maintained • Demarcation of exclusion zones (cones / bollards) • Signage • Spotter (where a physical barrier is not in place) • Exclusion zone not applicable if the moving parts of the machine are encapsulated as part of the operating design
Physical barrier e.g. screens, curtains, cages or walls	To prevent a worker being struck by operating fixed plant or moving object	• Failure mode discussion with operator to identify moving / ejected object potential • RPEQ certified impact resistant barrier observed in place, adequate and functional • Dedicated room / area to isolate workers from plant • Compliance with manufacturer's instructions • Compliance with AS 4024 for new plant • Maintenance records • Signage highlighting the hazard • Hydraulic line whip checks
Emergency Services assistance	To minimise the impact of interaction with hazardous energy on human life	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm

Hazardous Substance

Critical Control – Hazardous Substances	Objective	What could we expect to see?
Asbestos Containing Material (ACM) is in good condition and not damaged or disturbed	To prevent contaminated atmospheres containing Asbestos fibres	• Friable ACM is encapsulated, e.g. painted, bonded or enclosed • Labelling on ACM • Asbestos registers on all sites where ACM exists • Visible ACM is in good condition, not damaged with exposed fibres • Specialist contractors only being used to remove or interact with ACM with effective controls in place to manage any inhalation risk
Dust collection or suppression for tools and equipment that generate Respirable Crystalline Silica (RCS) dust	To prevent contaminated atmospheres containing Respirable Crystalline Silica (RCS) dust	• Dust collection attachments with HEPA filter used on hand held drills, grinders and cutting tools • Wet down / suppression attachments used on large concrete cutting saws. • No visible dust is generated
Automatic shutdown of Chlorine Gas, Ozone Gas and Ammonia systems	To prevent large scale leaks of Chlorine Gas, Ozone Gas, Ammonia vapour	• Fit for purpose, operational system that detects leaks and automatically shuts down the system at a pre-determined leak level • Automatic shutdown systems are within service date
Fit for purpose Respiratory Protective Equipment.	To prevent inhalation exposure to hazardous substances	• Note- all workers who opt to wear tight-fitting RPE (not mandatory) must have passed a fit-test (for every make and model they wear) within the last 12 months and have no facial hair where the mask seal meets their face. • For Chlorine Gas drum / cylinder changeover; either a tight-fitting respirator mask or loose fitting PAPR hood attached to continuous air supply • For Ozone hazard either a tight-fitting respirator mask or loose fitting PAPR hood attached to continuous air supply • For Ammonia vapour hazard either a tight-fitting respirator mask or loose fitting PAPR hood with ABEK-3 cartridge filter • For Fluoride hazard either a tight-fitting respirator mask or loose fitting PAPR hood with P3 cartridge filter Leak detection of Ozone in atmospheres greater than the Workplace Exposure Limit (WEL) and less than the evacuation level using full face P3 Respirator • Leak detection of Ammonia vapour in atmosphere greater than the Workplace Exposure Limit (WEL) and less than the evacuation level using full face Respirator with ABEK-3
Emergency Services assistance	To mitigate the impact on human life of exposure to a hazardous substance	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm

Mobile Plant

Critical Control – Mobile Plant	Objective	What could we expect to see?
Fit for purpose mobile plant	To prevent the use of mobile plant; in unsuitable conditions or outside its operational limits	• Mobile plant procurement specifications match task requirements • No unauthorised modifications • No overloaded plant • No bypass of safety devices • Guarding in place • No loose objects in vehicle cabin
Mobile Plant operated to conditions, manufacturer's instructions and within specified limits	To ensure mobile plant is operated to conditions and manufacturer's instructions / limits	• Operator wearing seat belt • Mobile plant operating to conditions such as slope and ground condition • Mobile plant operated within manufacturers specifications and limits • Operator can describe mobile plant limits of operation and their custodian obligations e.g. licenced, not speeding, not alcohol or drug affected • No bypass of safety devices
No persons "In the firing line" of mobile plant	To prevent interaction between mobile plant and pedestrians	• Well maintained clear areas where mobile plant is used • Well defined marking / delineation of permanent exclusion zones e.g. walkways and pedestrian crossings • Temporary mobile plant exclusion zones clearly delineated • Mobile Plant Spotter where required • No persons within 3m of operating mobile plant • Blind spots and crush zones identified in the Traffic Management Plan (TMP) • Convex mirrors on blind corners / Signage in place • Spotter in place using positive communication with the machine operator • Bucket grounded and controls de-activated before person enters the slew radius exclusion zone • No person in the slew radius exclusion zone during operation **Precautions with pick and carry cranes;** • Where possible; tag line(s) tied to the front of the crane to eliminate the need for the dogger to hold the end of the tag line. • The dogger is not in the travel path of the crane or between the crane and the suspended load. • The crane operator stops the crane if he or she loses site of the dogger."
Traffic Management established where mobile plant is in proximity to persons or other vehicles	To prevent interaction between mobile plant and pedestrians	• Physical barriers in place (of adequate strength / structure) e.g. fencing/gates (photos of examples) • Traffic Control • Buffer Zones • No persons behind barriers • Warning signage • Flashing lights on stopped roadside vehicles • Approved and documented Traffic Management Plan
Emergency Services assistance	To minimise the impact of interaction with vehicles and mobile plant on human life	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Where relevant, site IERP current and available • First aid resources readily accessible • Crush injury response appropriate (e.g. other than to save life, not removing the crushing object until emergency services present)

Violence

Critical Control – Violence	Objective	What could we expect to see?
Unauthorised access deterred or prevented at identified sites	To deter or prevent unauthorised access to Seqwater work sites	• Where reasonably practicable, prevent unauthorised access to Seqwater sites • Working gates, not chocked open, no dummy locks, no tail gating (vehicle or person) • No damaged fences • No chocking swipe card access (over riding / tampering with switches) • Signed in guests, visitor tags/lanyards
Do not engage with, and/or leave the vicinity of, identified persons	To prevent a verbal confrontation from becoming physical	• Explanation from workers of how they would identify situations where they would not engage persons and leave the vicinity • Explanation from identified and trained workers of how they would attempt to de-escalate a confrontation
Police escort for identified activities	To prevent uncontrolled interactions with known aggressive members of the public or land holders	• Team based identification of high-risk tasks, persons or areas that require police escort • Examples may include; compliance activities and visiting private property • Use of letter, phone, email or remote engagement instead of face to face interaction
Minimum of 2 workers for identified activities	To prevent uncontrolled interactions with known aggressive members of the public or land holders	• Team based identification of high-risk tasks or areas that require a minimum of 2 workers • Examples may include; compliance activities, transiting easements, community events and sites known for anti-social behaviour
Emergency Services assistance	To minimise human harm caused by exposure to human violence	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm • First aid kits, trained workers in place and available • Journey monitoring in place

Working at Height

Critical Control – Working at Heights	Objective	What could we expect to see?
Edge protection including guardrails and fixed or portable barriers	To prevent exposure to an unprotected edge at height	• No workers are observed closer than 2m to any unprotected edges where a fall risk exists • Secure edge protection of sufficient height and strength to prevent a fall • Guard rails / handrails / portable barriers / scaffold edge protection (between 900mm -1100mm, high if assessed as required) • Scaffold tag in date / handover certificate for all scaffold • Self-closing, inward opening gates • Gaps between structures and Scaffolds >225mm have edge protection in place • Other than arms, worker's body mass is behind edge protection • No workers leaning outside work platform / workbox • No workers standing on EWP / workbox / Scaffold rungs • 100% connection/tie off to transfer from EWP to roof • Loose objects are prevented from falling from edges by toe boards • Secure toe boards in place, well maintained and effective
Grid Mesh and flooring is securely fastened	To prevent uncontrolled movement of grid mesh and flooring	• Grid mesh / raised flooring is secured in place on all side by clamps or welds • Welded containment in place that prevents movement of the panel • Grid mesh is level and does not tip or move when under load • Gaps between grid mesh panels <=15mm • Gaps between Scaffold boards no greater than 10mm.
Fall restraint and arrest systems	To prevent equipment failure and incorrect use of fall restraint and arrest systems	**Fall Restraint** • The system prevents a worker at height from being able to move closer than 2m to an unprotected edge • The worker is wearing a harness correctly adjusted to fit and connected to a certified anchor point • All equipment has in date test tags and is in good condition • Workers at height are connected to the system at all times e.g. double lanyard or second connection to enable transfer • Chin straps used when person or helmet could fall **Fall Arrest** • Fit for purpose equipment, in good condition, has in date inspection tags, inspected before use (no damage, no fall indicator exposed) • Worker wearing harness correctly adjusted to fit • Full body harnesses that incorporates shock absorbing lanyards or inertia reels • Worker connected to the certified anchor point • Full body harnesses that incorporates shock absorbing lanyards or inertia reels. • Anti-trauma leg strap pouches (X2) attached to harness • Certified / engineer approved anchor points • Pendulum risk and fall height considered and controlled • Chin straps used when person or helmet could fall • Hardhat / helmet, suitable for the heights work being undertaken
Stable ground conditions	To prevent uncontrolled movement of a portable platform or ladder	• Stable, even and clean surface • Ground conditions suitable for the task • Use of boards / stabilising equipment e.g. scaffold bracing • Conditions inspected and checked for pits / holes / non-trafficable lids
Secondary protection device on Elevated Work Platforms (EWP)'s to prevent inadvertent activation of controls	To prevent accidental activation of EWP control levers and/or to supply a safe zone to prevent crush injuries	**2 or more of the following must be evident:** • Foot pedal requiring full time pressure to activate controls • Controls protected from inadvertent activation by guard rails • Controls protected from inadvertent activation by recessed buttons • Protective structure: a device attached or fixed to the existing guardrails that provides a protective barrier around the operator • Sensing device: a device activated by force or pressure that stops the movement of the EWP to minimise harm.

Working at Height

Critical Control – Working at Heights	Objective	What could we expect to see?
Do not access fragile roof areas	To prevent worker access to fragile roof areas	• Access points (cage/gate) locked out / danger tagged • Delineated walkways on fragile roof • Danger Signage in place " e.g. DANGER - fragile roof - do not access "
Spotter in place for mobile plant used as a working platform	To prevent uncontrolled movement or impact of mobile plant used as a working platform	• Dedicated spotter in place • No use of mobile phones or electronic devices that may distract whilst spotting or operating mobile plant • Undistracted operators of mobile plant are focused on the primary task • Dedicated and undistracted spotter in place in direct communication with mobile plant operator
Exclusion zone (Drop Zone)	To prevent workers being exposed to falling objects	• Clear barrier system in place • Signage, expanding barriers, tape, barrier mesh, drop nets • Spotter in place to control exclusion zone • No persons in exclusion zone • soft or hard barriers in place • clear signage and marking of work at height area • mobile plant is kept well clear of Work at Height structure, plant or equipment • Only take essential tools to height • Use of tool bag • Tidy work area, clean as you go • Tools are tethered where practicable • Helmets (in expiry date) worn • Helmets are worn in Elevated Work Platforms • Chin straps used when person or helmet could fall
Rescue suspended worker	To minimise the impact of a fall from height or falling object on human life	• Rehearsed rescue plan in place and effective • Rescue equipment (tripod, winches, harness, first aid kit, communication device) in place, in test date and in good condition • Diagram / explanation of rescue responsibilities • GPS co-ordinates • Identification of specialist emergency services rescue that may be required
Emergency Services assistance	To minimise the impact of a fall from height or falling object on human life	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Where relevant, site IERP current and available • First aid resources on site • Crush injury response appropriate (e.g. other than to save life, not removing the crushing object until emergency services present)

Working on, in, or near water

Critical Control – Working, on, in or near water	Objective	What could we expect to see?
Edge protection is in place on built structures where required e.g. handrails and/or guardrails, fixed grid mesh	To prevent a fall to water from a built structure	• Edge protection in place and complying with relevant standards • No damaged edge protection (e.g. flood damage, rust • Break away edge protection has been replaced • Grid mesh / flooring secured in place
Life Jackets or Fall restraint / arrest worn by persons closer than 2m to an unprotected edge where there is a risk of drowning	To prevent or mitigate a fall to water	• Risk of drowning may include: – Falling into water and drowning (including aerated water / liquid) – Being swept away by fast moving water and being injured or drowning. – Being trapped under water by equipment or objects and drowning. ..... • No persons closer than 2m to unprotected edge without; – Life / Swift water jacket donned – Fall arrest / restraint system – Signage warning of 'Aerated water/liquid' – Handrail / edge protection in place • No persons working within 2m of any aerated tank without a barrier or fall restraint • No persons in water where it is or is likely to be deeper than 1m and where the water speed is more than 0.5m/s
Fit for purpose vessels / kayaks	To ensure selection and procurement of fit for purpose and compliant vessels including kayaks	• Maintenance records • Pre-start inspection records • No damage visible / good condition • Tag and Lock out of service of unfit vessels • Vessel log books • Vessel survey compliance as per schedule • AMSA audit records
Vessels are operated to conditions and manufacturers specifications	To prevent unsafe use of vessels	• Seqwater Vessels must be operated in a safe manner and at a speed that is suitable for the location and environmental conditions being encountered. • Where applicable speed limit aligns with 'Schedule of Speed Limits in Queensland'. • Operating within manufactures instruction • Vessel log
No persons or vessels in an exclusion zone around a spillway when dam is spilling	To prevent a vessel being swept over a spillway	• Clearly identified exclusion zones (buoy line and signage visible) • No vessels downstream of buoy line when dam is spilling
Mobile plant in proximity to water is operated to conditions and manufacturers specifications	To prevent mobile plant interaction with water	• Mobile plant operated in accordance with speed limits and conditions (slope, ground stability, proximity to water is assessed) • Spotter in place when risk of mobile plant interacting with water • Undistracted spotter (e.g. no mobile phone use) • Mobile plant is fit for purpose and operated within manufacturers specifications
No vehicles to drive on a submerged road (unless authorised)	To prevent vehicles being inundated and swept away by moving water	• No persons driving over submerged roads unless; – the depth of water is less than 150 mm (around the height of the tyre of the vehicle) and – the water is still, or the flow is less than 0.5 m/s and – the end of the crossing is visible and there are no signs of erosion or instability of the road base and – there is no potential for a sudden increase in the depth or velocity of water • Assessment conducted / exemption form • Drivers not crossing submerged roads • Selection and use of fit for purpose vehicles • High clearance, 4WD vehicles in use to cross water bodies • No small 2WD's crossing water
Contractors have a clean, reliable and adequate air supply for the duration of the diving activity	To prevent divers being exposed to an unsafe breathing atmosphere	• Diving work must be performed in accordance with all legal requirements and applicable standards and codes. • Air supply verified clean reliable and adequate for the duration of the diving activity • Specialist certified diving contractors in place

Critical Control – Working, on, in or near water	Objective	What could we expect to see?
		• Diving SWMS - high risk construction work • Dive logs / plans • Licenced divers
Contractor diving equipment is serviced, maintained and calibrated to manufacturers specifications	To prevent diving equipment failure	• Diving work must be performed in accordance with all legal requirements and applicable standards and codes. • Contractor diving equipment is serviced, maintained and calibrated to manufacturers specifications • Specialist certified diving contractors in place • Diving SWMS - high risk construction work • Dive logs / plans • Licenced divers
Depth and duration limits of diving activities carried in accordance with AS/NZS 2299.1	To prevent exposure to unsafe depth and pressures	• Diving work must be performed in accordance with all legal requirements and applicable standards and codes. • Depth and duration limits of diving activities carried in accordance with AS/NZS 2299.1 • Specialist certified diving contractors in place • Diving SWMS - high risk construction work • Dive logs / plans • Licenced divers
Seqwater personnel are not permitted to perform diving work	To ensure diving work at Seqwater is only performed by specialist contractors	• No Seqwater workers conducting diving work • Diving work at Seqwater is only performed by specialist contractors • Diving work must be performed in accordance with all legal requirements and applicable standards and codes.
Rescue the worker from body of water / liquid	To minimise human harm caused by unplanned partial or full submersion of a worker in water	**Worker falls to water from built structure** • Teams of 2 or more workers within sight and sound of each other at all times • A safe means of egress or retrieval from water readily available at work areas where there is a risk a person could fall into water e.g. Floatation device / life ring / rescue coil / ladder / rope or netting • Emergency equipment clearly visible and well maintained **Worker falls to water from natural edge** • Teams of 2 or more workers within sight and sound of each other at all times Identification of areas of egress from natural water bodies • A safe means of retrieval from water available including "swift water rescue' resources and techniques as required • Emergency equipment clearly visible and well maintained **Worker fall to water from a vessel** • Teams of 2 or more workers within sight and sound of each other at all times • A safe means of retrieval from a vessel of a person fallen overboard • Emergency equipment clearly visible and well maintained • Emergency during a diving activity • Dive teams of 2 or more • A safe means of retrieval from submersion during a diving activity • Emergency equipment clearly visible and well maintained
Emergency Services assistance	To minimise human harm caused by unplanned partial or full submersion of a worker in water	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site • Mobile phones / communication device with service • Knowledge of numbers to call to raise alarm • First aid kits, trained workers in place and available • Teams of 2 or more workers for identified work assessed as having a risk of exposure to water e.g. working near an unprotected edge (Workers should remain within sight and sound of each other at all times) • A safe means of egress or retrieval from water must be readily available at work areas where there is a risk a person could fall into water

Critical Control – Working, on, in or near water	Objective	What could we expect to see?
		• Floatation device / life ring clearly visible and maintained • Rescue Coit • Ladder / rope / netting • Identification of areas of egress from natural water body • A Life Jacket / Swift Water Jacket must be worn at all times when onboard a water craft or when working within 2m of an unprotected edge where a worker could reasonably drown. • 150kn lift for life jackets **Swift Water Rescue** • 'Swift water first responder' training for any workers who may be required to work near Swift water, this will include the worker being able to self-rescue • Equipment (swift water jacket, throw ropes, suitable footwear, helmets of required) • Trained workers in place (TNA in place for identified workers) • Demonstrated knowledge / explanation of swift water rescue technique