PROTOCOL FOR ENTERING AND WORKING IN CONFINED SPACES

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Christchurch City Council

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INTRODUCTION/SCOPE

This Protocol sets the minimum standards required for workers entering confined spaces owned and/or operated by Christchurch City Council (CCC). It applies to workers meaning our employees, contractors and sub-contractors.

The overall aim of this Protocol is to ensure the safe entry, work and exit from a confined space for those workers.

Whilst the requirements outlined in this Protocol align with the Australian Standard 2865:2009 Confined Spaces, compliance is expected with the full Standard as our Regulator WorkSafe NZ accepts AS 2865:2009 as the current state of knowledge and practice when it comes to confined space entry work in New Zealand.

OBJECTIVES

The objective of the Protocol is to eliminate the need to enter confined spaces, or where this is not practicable:

a. Provide for the health and safety of all workers who need to enter confined spaces by preventing exposure to hazards which may otherwise be experienced when working in a confined space, and thereby prevent collapse, injury, illness or death arising from exposure to those hazards; and
b. Ensure all CCC workers who require entry are consistent and follow the same procedures, have the right knowledge, experience and the right equipment to do so safely.

DEFINITIONS

Competent Person: A person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to perform a specified task correctly.

Confined Space: (as defined in AS 2865:2009) Confined Space is an enclosed or partially enclosed space that is not intended or designed primarily for human occupancy, within which there is a risk of one or more of the following:

a. An oxygen concentration outside the safe oxygen range.
b. A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation.
c. A concentration of flammable airborne contaminant that may cause injury from fire or explosion.
d. Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.

Confined spaces include, but are not be limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, ductwork, pipelines, etc.

See Appendix 3 for a flowchart that will help with the identification of a confined space.

Contaminant: Any dust, fume, mist, vapour, biological matter, gas or other substance in liquid or solid form, the presence of which may be harmful to health and safety.

Engulfment: The immersion or envelopment of a person by a solid or liquid that is stored within the confined space.

Explosive Limit:
Lower explosive limit (LEL) - The concentration of a flammable contaminant in air below which the propagation of a flame does not occur on contact with an ignition source.

Upper explosive limit (UEL) - The concentration of the contaminant in air above which the propagation of a flame does not occur on contact with an ignition source.

Flammable Range: The range of flammable contaminant (percentage by volume) in air in which an explosion can occur upon ignition. Expressed by lower explosive limit (LEL) and upper explosive limit (UEL).

Impairment: The condition of being unable to safely conduct a task as a consequence of physical or mental unfitness.

Stand-by person: A competent person assigned to remain on the outside of, and in proximity to, the confined space and capable of being in continuous communication with and, if practical, observing those inside. In addition, where necessary, the competent person may operate and monitor equipment for the safety of personnel in the confined space and initiate emergency response.

CONFINED SPACE ENTRY PROCEDURES

Use of Permit to Work (PTW) Systems vs CCC Protocol for Entering and Working in Confined Spaces

Workers entering a CCC confined space can do so under a formally recognised Permit to Work (PTW) system such as that of the CCC Wastewater Treatment Plant (CWTP), City Care Ltd or Fulton Hogan. That PTW system however must have the following components and processes as a minimum:

- Documented and assigned accountabilities and responsibilities for all aspects of the confined space entry, work and exit.
- A risk assessment (often the permit document) that clearly identifies all hazards, associated risk levels for each hazard and adequate controls.
- Information on any gas detection levels and isolations.
- Emergency response plans.
- Consultation processes for those involved in the actual confined space work
- Identified training and competency requirements for all involved in the confined space work
- A named permit issuer (trained and assessed as competent as an issuer).
- A named permit receiver (trained and assessed as competent as a receiver).
- Named permit users (all trained and assessed as competent as a user).
- A named observer/spotter (trained and assessed as competent as an observer/spotter).
- A documented monitoring process that is applied regularly to ensure standards at the confined space site are occurring as intended.
- A documented audit system that is applied regularly to ensure standards in the overall PTW system are satisfactorily maintained.

In the absence of the above PTW system, all other confined space work that relates to CCC owned and/or operated confined spaces (e.g. such as water, waste-water, storm-water assets, pumping stations, facilities maintenance or service work) will follow the processes outlined in this CCC Protocol for Entering and Working in Confined Spaces.

Site Supervisor for Confined Space Entry

For all confined space entries there must be an appointed and named Confined Space supervisor who is responsible for the entire confined space entry, work and exit. The Confined Space Entry Form/Risk Assessment template (see Appendix 1) will be used as the risk assessment for this work.

No person is to enter a confined space without the completion of the Confined Space Entry Form/Risk Assessment.

Roles and Responsibilities in CCC Confined Spaces Work

Confined Space Supervisors are responsible for the overall confined space entry, work and exit as well as:

- Ensuring that all processes outlined in the Confined Space Entry Form/Risk Assessment are in line with the HSW Act 2015, the Regulations 2016 and AS/NZ 2865-2009.
- Ensuring the Confined Space Entry Form/Risk Assessment has been completed adequately and completed by all those involved in the confined space entry (e.g. workers, observers, rescue personnel (see Appendix 1)).
- Approving the Confined Space Entry Form/Risk Assessment.
- Ensuring all those involved in the confined space entry are trained based on the training requirements outlined in this Protocol.
- Ensuring that the documentation includes any foreseeable precautions or instructions necessary for safe entry and the execution of work.
- Ensuring calibrations, function checks are completed and battery levels are up to date/correct for all equipment used in the confined space entry.
- Inspecting the confined space before entry is made.
- Inspecting the confined space on completion of work (close out of Confined Space Entry Form/Risk Assessment).
- Keeping a copy of the Confined Space Entry Form/Risk Assessment for future inspection.

Workers, Spotters/Observers, Rescue Personnel are responsible for:

- Participating in the completion of the Confined Space Entry Form/Risk Assessment.
- Participating in the confined space work as intended by the Confined Space Entry Form/Risk Assessment by following the agreed processes and wearing and using PPE as intended.
- Communicating with the Spotters and following any instructions of the Spotter.
- Keeping to the plan of work, Confined Space Entry Form/Risk Assessment and emergency procedures.

Spotters/Observers/Standby Persons are responsible for:

- Participating in the completion of the Confined Space Entry Form/Risk Assessment.
- Remaining in constant contact with persons in the confined space.
- Ensure the area in and around the confined space remains safe.
- Ensures controls are maintained (e.g. isolations, ventilation).
- Knows what to do in the event of an emergency.
- Has access to emergency services.
- Advises evacuation when necessary and raises alarm.
- Able to effect immediate rescue if set up.
- Documents gas test results on Confined Space Entry Form/Risk Assessment.
- **Ensuring they never enter the confined space.**

Training/Competency Requirements for CCC Confined Space Work

All persons who enter a confined space shall be trained and assessed as competent to perform those activities. Training is required for the supervisor of any confined space entry work. **A refresher course must be attended at least every two (2) years.**

Training must be completed by a recognised training provider who will train and assess to the required NZQA Unit Standards in Confined Space. The course **must also have a practical component** so that participants experience a confined space entry. The course must cover:

- Relevant legislation and standards
- Hazards/risks relating to work in or near confined spaces
- Safe work practices including isolation/lockout methods and procedures
- Emergency response procedures
- Selection, use, maintenance and fitting of personal protective equipment
- Observer or Spotter responsibilities
- CCC Protocol overview
- Gas detection

Confined Space entrants must hold the following NZQA Confined Space Unit Standards:

- 17599 (Plan a confined space entry). This is mandatory.
- 25510 (Operate an atmospheric testing device to determine a suitable atmosphere to work safely), **or**
- 3058 (Perform gas tests for an energy and chemical plant).
  Note – One or other of these unit standards (3058 or 25510) are mandatory.
- 18426 - Demonstrate knowledge of hazards associated with confined spaces (optional)
- 19207 - Enter, work in, and exit a confined space in the water industry (optional)
- 17596 - Safety Observer (optional).

Trained specialists only will work in oxygen deficient environments and will require the certification listed below involving the use of self-contained breathing apparatus. They will also have rescue procedures, CPR and first aid training.

- US 25044 – Wear and Operate Compressed Air Breathing Apparatus in the Workplace (mandatory).

Authority to Enter CCC Confined Spaces

All persons entering a CCC Confined Space will be listed on the CCC Confined Space Register and will have received from Council an Acknowledgement Letter and Authority Card to enter those confined spaces. Acknowledgement Letters and Authority Cards will only be issued on inspection of current training qualifications/certification as outlined above.

This authority extends to two (2) years from the date of issue and will only be renewed on the completion of a refresher course and updated certification.

Workers without the training requirements and authorities outlined above WILL NOT enter any Christchurch City Council confined space.

HAZARD/RISK MANAGEMENT

Prior to any person entering a confined space, the Confined Space Supervisor must ensure that where practicable all potentially hazardous services, normally connected to that space are purged (cleaned), ventilated, cooled down, isolated and/or locked out and tagged where practicable, in order to prevent:

a. The introduction of any materials, contaminants, agents or conditions harmful to persons occupying the confined space; and
b. The activation or energising in any way of equipment or services that may pose a risk to the health and safety of persons within the confined space.

Hazard Identification

Potential Hazards of Confined Spaces

Hazardous Atmospheres: The most common risk in a confined space is an atmosphere that is oxygen deficient, oxygen enriched and/or flammable or have a toxic atmosphere.

An oxygen deficient atmosphere (not enough oxygen in the space) has less than 19.5% of available oxygen. This can be caused by rust, fire, displacement by other gases, oxidation of organic or inorganic substances and respiration.

Any confined space with less than 19.5% oxygen should not be entered without an approved SCBA (self-contained breathing apparatus) or supplied air hose with an escape pack.

An oxygen enriched atmosphere (too much oxygen in the space) has more than 23.5% of available oxygen. The issue here is the risk of explosion or spontaneous combustion from an atmosphere that may contain flammable gases, vapours or dusts. These could ignite with a spark or open flame.

To maintain a safe working environment in a confined space, the oxygen level must be between 19.5% and 23.5%.

Toxic atmospheres are also hazardous. They are atmospheres that contain gases, vapours, dusts or fumes. They have a poisonous effect on the body. Sewage and other rotting organic materials produce hydrogen sulphide and carbon monoxide. Other toxic substances may have been spilled or dumped into a sewer system. Cleaning, painting or welding may produce dangerous vapours or fumes. All are hazardous to any human in a confined space. Workplace exposure standards should be referred to in order to determine safe levels.

Falls from Height: Where there is a potential for a worker to fall from any height, reasonable and practicable steps must be taken to prevent harm from resulting (e.g. wearing of safety harness connected to a winch).

Engulfment: Workers can be trapped or buried by a liquid or substances that can be inhaled and cause death by strangulation, constriction or crushing. Where this risk exists the worker must wear a safety harness and be connected to a lifeline to ensure an immediate rescue is achieved.

Falling Objects: Workers in confined spaces should be aware of the possibility of falling objects, especially in spaces which have topside openings and where work is being done above the worker.

Temperature Extremes: Extremely hot or cold temperatures can present problems for workers. For example, if the space has been steam cleaned, it should be allowed to cool before entry is made.

Noise: Noise within a confined space can be amplified because of the design of the space. Excessive noise cannot only damage hearing, but can also affect communication, such as a shouted warning to go unheard.

Slick/Wet Surfaces: Slips and falls can occur on wet surfaces causing injury or death to workers. Also, a wet surface will increase the likelihood and severity of electric shock in areas where electrical circuits, equipment and tools are used.

Biological Hazards: Bacteria, viruses or fungi may be present in the confined space. Always follow good personal hygiene practices and wash hands and face before eating, drinking or smoking.

Moving Equipment: Augers, rotating or moving parts such as conveyer belts must be locked out to prevent trapping or crushing.

Drowning: Tide and weather will impact storm water levels and need to be carefully monitored.

Confined Space Entry Form/Risk Assessment

All confined space entries will be completed using a Confined Space Entry Form/Risk Assessment (see Appendix 1). This risk assessment shall be undertaken by the supervisor before conducting any tasks associated with the confined space. The assessment will take into account the following:

a. The potential and actual hazards/risks associated to the confined space.
b. The tasks required to be conducted, including the need to enter the confined space.
c. The range of methods by which the tasks can be conducted.
d. The hazards involved and the associated risks with the actual method selected and equipment proposed to be used.
e. Emergency response procedures
f. Competence of the persons to undertake the tasks.

Appendix 1 Confined Space Entry Form/Risk Assessment is an example of the minimum information and risk assessment process to be conducted prior to every entry. Other templates may be used (e.g. permits relating to a formal Permit to Work system) but only on the provision they have the same or higher standard as this CCC document and align with the AS/NZ 2865-2009 (Confined Space) as a minimum.

This Confined Space Entry Form/Risk Assessment (see Appendix 1) shall be completed for a confined space work for a single day only. Each entry within that day may require further (gas or oxygen) assessment that must be recorded on the Confined Space Entry Form/Risk Assessment. On completion of the day the Confined Space Entry Form/Risk Assessment shall be closed out. Should the work continue the following day, a new Confined Space Entry Form/Risk Assessment shall be completed and approved by the supervisor.

Hazard/Risk Controls

The hierarchy of control measures are:

1. Elimination
2. Substitution
3. Isolation
4. Engineering controls
5. Administrative controls; and
6. Use of personal protective equipment

Personal protective equipment shall only be used as a last resort when all of the other control measures have failed to adequately control the risk or in an emergency response.

Basic equipment to be available is:

- Gas detector (calibration up to date)
- Confined space documentation as indicated above
- Protective clothing
- First aid equipment
- Rescue equipment (with inspection/maintenance programme up to date)
- Hygiene and wash up equipment
- Communications equipment

Persons to be available at the work site for the duration of the work are:

- Supervisor - trained and assessed as competent (can enter confined space)
- Spotter, Observer or Standby Person - trained and assessed as competent (must not enter confined space)
- Persons (workers) entering confined space - trained and assessed as competent
- Rescue Personnel - trained and assessed as competent (must not enter the confined space. Can be observer or spotter).

Securing a Safe Atmosphere

Before a person enters a confined space it shall be ensured that:

a. The confined space contains an oxygen level within the safe oxygen range (between 19.5% - 23.5% content by volume under normal atmospheric pressure).
b. The atmospheric contaminants in the confined space are reduced to below the relevant workplace exposure standards.
c. The concentration of flammable contaminant in the atmosphere is below 5% of its lower explosive limit (LEL).
d. The confined space is free from extremes of temperatures.
e. Engulfment of any sort cannot occur (e.g. liquid, materials, soils).

Only when the test results show the confined space is safe, should normal entry be considered.

The testing of the atmosphere with gas detection instruments, for contaminants (i.e. hydrogen sulphide and carbon monoxide), percentage (%) LEL and oxygen must be carried out from outside the confined space. Identify other likely contaminants to monitor by reviewing the hazards identified and the risk assessment that has been done.

Atmospheric monitoring is mandatory prior to each entry into a confined space and at regular intervals (5-10 mins) throughout the entry. Monitoring levels must be recorded on the Confined Space Entry Form/Risk Assessment document by the observer.

Continuous personal atmospheric monitoring for the presence of contaminants and safe oxygen levels is also mandatory in all Christchurch City Council confined spaces while they are occupied.

Where it is not practicable to provide a safe oxygen level, or atmospheric contaminants cannot be reduced to safe levels, no person enters the confined space unless they are equipped with and trained in the use of self-contained breathing apparatus.

Gas detection equipment should be recalibrated at regular intervals according to the manufacturer's instructions (e.g. six monthly). A pre-use test (as per manufacturer's instructions) is to be run daily (when being used) to check if the instrument is working correctly.

After withdrawing the plant from service, and using an isolation tag out system where practicable, precautions should be taken to prevent potentially dangerous materials from entering the confined space while workers are inside. The safest course is to completely disconnect the space from every other item of plant and seal off every inlet pipe. If isolation is not possible, and the space is likely to be contaminated during occupancy, continuous ventilation and monitoring is required.

All materials - solids, liquids or gases - which are liable to present a hazard inside the space must be removed. Potentially dangerous materials may be trapped in sludge, scale or behind loose linings or brickwork. Special care should therefore be exercised and cleaning processes adopted to meet each set of circumstances. With steam-volatile substances, steam cleaning will be found to be effective to remove residue. Always allow confined space to return to an acceptable thermal environment prior to entry. Forced ventilation with a blower fan is the recommended method of displacing contaminated air.

Emergency Specialist Work

In some unforeseen circumstances it may be necessary for an untrained person to enter a confined space. In this instance, the site supervisor who has completed the confined space entry training must be named and accompany/constantly supervise the untrained person throughout the confined space entry, work and exit.

The untrained person entering the space must be given the necessary information (hazards/risks, control measures, rescue requirements) about these protocols for entering and working in CCC confined spaces. They must also be named on the Confined Space Entry Form/Risk Assessment along with the supervisor that is directly responsible for them.

Safety Equipment Requirements

Equipment Maintenance Programme

The employer must ensure that where practicable, the safety equipment is appropriate to the work to be carried out in the confined space, is a part of a regular (documented) maintenance programme, and is inspected by an independent qualified person. The employer must ensure that the personal protective equipment (PPE) and rescue equipment is selected and fitted to suit the individual.

In addition to this all equipment used in any confined space entry will be inspected by workers using that equipment on a daily basis. Inspections will ensure the equipment maintenance programme (above) is up to date, no equipment is past its expiry date and the equipment is fit for purpose/in good working condition.

The supervisor of the confined space entry is responsible for ensuring this daily inspection occurs.

Safety Harness

Suitable safety harnesses and safety lines or rescue lines must comply with AS/NZS 1891.4:2009. They must be stored, inspected and maintained in accordance this standard.

Harnesses must be worn in accordance with the risk assessment carried out to determine the hazards/risks in the confined space.

As part of the risk assessment it is important to ensure that this equipment would not introduce a hazard or unnecessarily hinder free movement within the confined space. If free movement could be hindered, alternative plans should be arranged for rescue and fall arrest.

Respiratory Protective Devices

The aim is to achieve a safe atmosphere where respirators are not necessary. If this is not practicable, an appropriate respirator should be considered. The person/s must be fitted with a respirator by suitably qualified personnel.

Air-purifying respirators offer no protection against oxygen deficiency or oxygen enrichment. However, they can remove contaminants from the air that is breathed. To safeguard against dusts, fumes and mists, respirators must be fitted with particulate filters. To protect against chemical vapours and gases, respirators must be fitted with the appropriate chemical filter. Some atmospheres require respirators fitted with a combination of both.

NOTE: There are no filters suitable for protection against hydrogen sulphide gas.

Self-contained breathing apparatus are the only form of respiratory protection suitable for rescue purposes. Only those with specialist training in the use of SCBA gear can use them.

For further information see the WorkSafe NZ Guideline `A Guide to Respiratory Protection', AS/NZS 1716:2012 Respiratory Protective Devices, AS/NZS 1715:2009 Selection, Use and Maintenance of Respiratory Protective Devices.

Other Equipment

Hard hats, safety goggles, face shield, gloves, safety footwear, disposable suits, earplugs or muffs, non-sparking flashlights and tools may also be needed when entering a confined space.

Retrieval Equipment

When it is recognised as part of the risk assessment that retrieval equipment is necessary to facilitate entry into and exit from a confined space, it is essential to have a proper retrieval system for both workers and equipment. Proprietary systems are available consisting of a heavy-duty lifeline, tripod and personnel winch.

All equipment must be carefully checked before use. Harnesses or retrieval line showing any signs of wear should not be used.

The selection of the type of safety or rescue line and the storage and maintenance should be in accordance with AS/NZS 1891.4:2009 and should take account of the possible hazards/rescue arrangements.

Ladders/Tripods to Enter Manholes

Particular care should be taken to ensure tripods or ladders are firmly secured to prevent movement when entering manholes. A maintenance programme must be in place for all equipment and portable ladders should comply with AS/NZS 1892.

Communication

It is essential to have an appropriate means of communication between the worker inside a confined space and the Standby person or Spotter stationed outside, whether by voice, rope tugging, tapping or by a battery-operated communication system especially designed for confined space use.

Note that radio frequency/wireless devices do not work effectively in confined spaces such as tanks or sewers, where there is metal or concrete shielding between the interior of the space and the outside.

Body alarm devices may be useful in a confined space where communication between workers and attendants is difficult. These are designed to sound if the wearer does not move during a specified period of time.

In some instances, be aware that electrical communication may introduce an ignition source in flammable atmosphere.

Closing-Out on Completion of Confined Space Work

Prior to the Confined Space Entry Form/Risk Assessment being cancelled and closed out, all tasks in the confined space shall cease and all persons will have exited from the confined space.

EMERGENCY PROCEDURES

All contingencies for emergencies in the confined space shall be evaluated and the necessary equipment including lifting equipment to handle the possible emergency available on site. Appropriate emergency response and first aid procedures and provisions shall be planned, established and rehearsed.

Should an emergency occur within a confined space, follow these steps for rescue:

1. Call 111, request Fire Service assistance. Inform the emergency dispatcher of the situation including whether breathing apparatus or other special equipment is required.
2. If the confined space is safe to enter based upon air quality monitoring and judgement and another stand by person is present, provide first aid until professional help arrives. The new entrant must wear a full body harness attached to a safety retrieval line and system.
3. Assist emergency services as required.

In an emergency, the spontaneous reaction to immediately enter and attempt to rescue a person from a confined space may lead to the deaths or serious injury of those attempting the rescue.

No persons are to enter a contaminated atmospheric space to carry out retrieval of an unconscious person unless they have been trained in the use of SCBA equipment, have it available and are wearing it.

MONITORING SITE WORK

Monitoring of the work at confined spaces should occur on a regular basis to ensure safe work practices are understood and undertaken by site workers involved in the confined space, as outline on the approved Confined Space Form/Risk Assessment or the relevant Permit to Work system.

The Project Manager, or manager for which the work is being done, is responsible for ensuring this monitoring occurs periodically and is documented.

AUDITING SYSTEMS

Auditing of the management systems used in CCC Confined Space Work (e.g. this Protocol or any PTW systems in use) should occur periodically to ensure the systems and its related documentation remain adequate and up to date with legislation.

DOCUMENTATION

All completed Confined Space Entry Forms/Risk Assessments and any other associated documentation will be kept indefinitely by the supervisor responsible for the confined space entry, for the purpose of monitoring and audit by CCC and/or request from the Regulator (WorkSafe NZ).

REFERENCES AND APPENDICIES

References

- AS 2865:2009 - Confined Spaces
- AS/NZS 1716:2012 - Respiratory Protective Devices
- AS/NZS 1715:2009 - Selection, Use and Maintenance of Respiratory Protective Devices
- WorkSafe Factsheet - Confined Spaces: Planning Entry and Working Safely in a Confined Space.
- WorkSafe Guideline - A Guide to Respiratory Protection
- National Guidelines for Health and Safety in the NZ Water Industry

Appendices

1. Confined Space Entry Form/Risk Assessment (Template)
2. Additional Confined Space Entries - Log (Template)
3. Flowchart - Identification of a Confined Space (from AS/NZ 2865-2009 Confined Space)
4. CCC Risk Matrix

Appendix 1 - CONFINED SPACE ENTRY FORM/RISK ASSESSMENT

Christchurch City Council

Note:

- This document must be displayed in a prominent place at the actual confined space entry to facilitate signing and clearance.
- This Confined Space Entry Form/Risk Assessment is only valid for work in a confined space for a single shift or day. Further entries for the next shift or day will require a further Confined Space Entry Form/Risk Assessment to be completed.

Date:

Location:

Description of Work to be Undertaken:

Methods by Which the Tasks can be Conducted:

Isolations for Confined Space: *items ticked below isolated or made safe in this entry*

☐ Pipelines ☐ Mechanical/electrical drives ☐ Sludge/waste/deposits
☐ Harmful materials ☐ Electrical services ☐ Radiation services
☐ Warning notices, locks or tags fixed to means of isolation

Atmospheric Test Results (to be completed for first entry) Time of Test: .....
Gas detector model: ..... Serial No: ..... Next test date: .....
Oxygen ..... % Flammable gases ..... % LEL
Carbon Monoxide ..... ppm Hydrogen sulphide ..... ppm

Atmospheric Test Results (to be completed for each further entry) Time of Test: .....
Gas detector model: ..... Serial No: ..... Next test date: .....
Oxygen ..... % Flammable gases ..... % LEL
Carbon Monoxide ..... ppm Hydrogen sulphide ..... ppm

Atmospheric Test Results (to be completed for each further entry) Time of Test: .....
Gas detector model: ..... Serial No: ..... Next test date: .....
Oxygen ..... % Flammable gases ..... % LEL
Carbon Monoxide ..... ppm Hydrogen sulphide ..... ppm

RISK ASSESSMENT			
HAZARD (actual or potential)	**INITIAL RISK** (no controls in place) (see Appendix 4)	**CONTROL MEASURES** e.g. isolations, PPE, equipment to be used, use of spotters, gas detection requirements, rescue plan	**RESIDUAL RISK** (controls in place) (see Appendix 4)

Note: Hazards can include (but not limited to) Fall from Height, Noise, Engulfment, Slick/Wet Surfaces, Hot Work, Temperature Extremes, Chemicals and Fumes.

DO NOT ENTER ANY CONFINED SPACE IF RESIDUAL RISK REMAINS HIGH TO VERY HIGH. SEEK FURTHER GUIDANCE.

Safety Equipment/Personal Protective Equipment: *List what is to be available and to be used/worn.*

Emergency Response Plan: *List the actions you will perform in the event of an emergency.*

Authorisation: The confined space described above is in my opinion in a safe condition for the work to be done, provided that the precautions above are fully observed.

Name of Supervisor:

Signature: **Date/Time:**

Names of Those Entering Confined Space (including any untrained workers)**:**	**Competencies** (unit standards held)

Person/s Entering 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**

Standby Persons/Spotters are:

Completion/Close Out - All persons and equipment have left the confined space and equipment checked and restored correctly.

Signature of Competent Person: **Date/Time:**

Remarks or comments about the work:

Note:

- Prior to this Confined Space Entry Form/Risk Assessment being cancelled, all tasks in the confined space shall cease and all persons shall be removed from the confined space.
- A copy of this Confined Space Entry Form/Risk Assessment must be kept for future inspection.

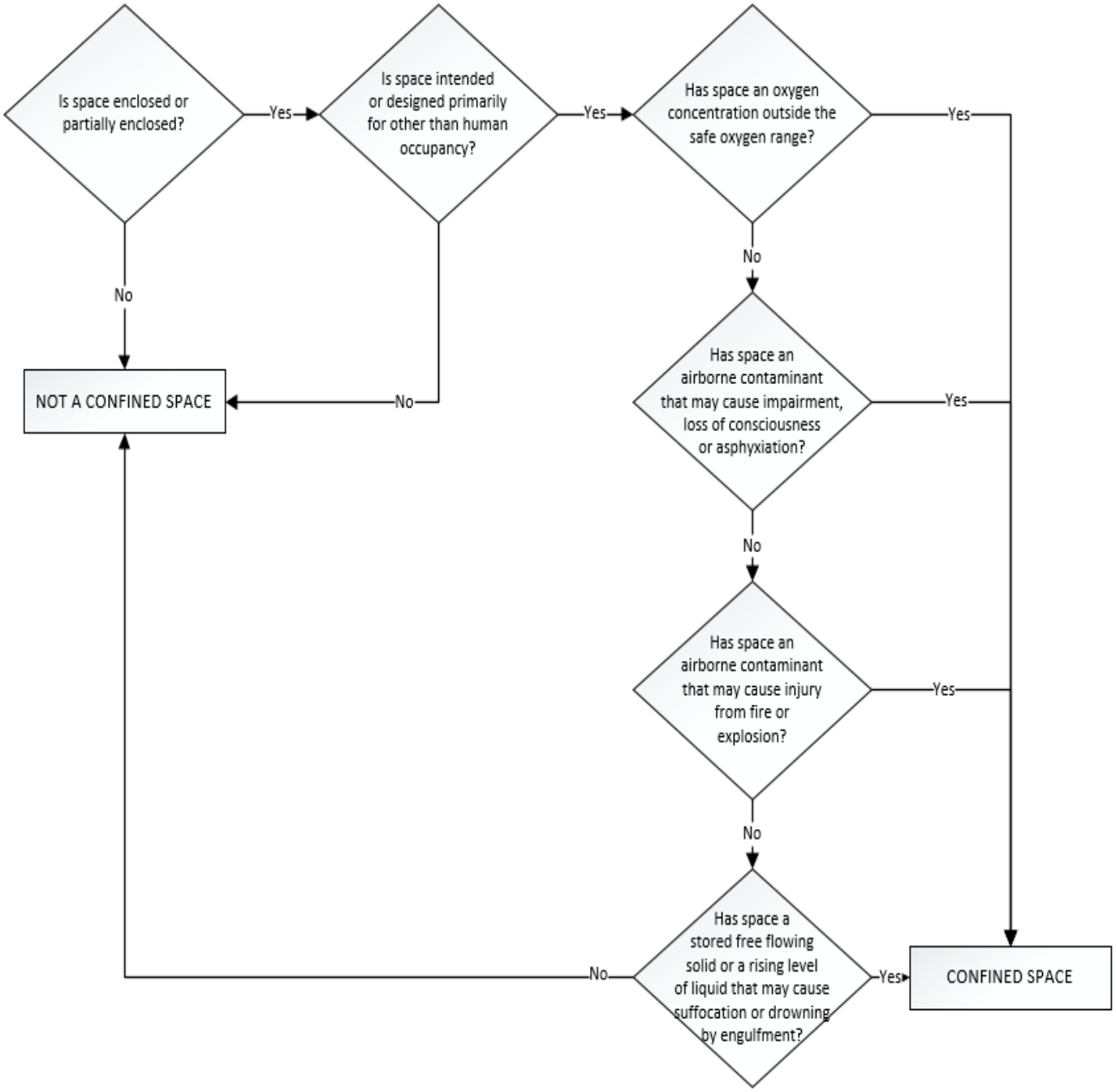
Appendix 2 - CONFINED SPACE ENTRY LOG

(Use if additional entries made)

Date	Location	Atmospheric Testing				Other Hazards (identify control method)	PPE to be worn	Signature of person entering space	Signature of standby person	Time in	Time out
		Oxygen (19.5% - 23.5%)	Flammable (<10% LEL)	Hydrogen Sulphide (< 10 ppm)	Carbon Monoxide (< 25 ppm)						

Appendix 3 - FLOWCHART FOR IDENTIFICATION OF A CONFINED SPACE

(from AS/NZ 2865-2009)



Appendix 4 - CCC RISK MATRIX

From Council's Risk Management Policy (TRIM 15/670109)

CCC Risk Matrix		Severity/Consequence				
		Insignificant	**Minor**	**Moderate**	**Major**	**Extreme**
Probability/Likelihood	**Almost Certain**	Medium	High	High	Very High	Very High
	Likely	Medium	Medium	High	Very High	Very High
	Possible	Low	Medium	High	High	Very High
	Unlikely	Low	Low	Medium	High	High
	Very Unlikely	Low	Low	Medium	Medium	High

Probability/Likelihood		
Rating	**Probability**	**Description**
Almost Certain	> 90%	Virtually guaranteed to occur
Likely	> 70%	Will probably occur in most circumstances. Common occurrence
Possible	> 40%	Could occur at some stage. Some history of occurrence
Unlikely	> 10%	Could occur. Little history but a chance of occurring
Very Unlikely	> 10%	May occur only in exceptional circumstances. No history but a remote chance of occurring

Severity/Consequence				
Insignificant	**Minor**	**Moderate**	**Major**	**Extreme**
(Where occurrence/trends in near-miss incidents should be used to guide risk-likelihood).	First aid injury, onsite first aid treatment sufficient.	Medical attention offsite, short-term injury, with medium term effects.	Serious injury resulting in hospitalisation. Long term effects.	Serious injury resulting in permanent effects to person's quality of life. One or more fatalities.