

<i>The Town of Fort Frances</i>	<b>SECTION</b> HEALTH AND SAFETY
<u>Confined Space</u>  <b><u>POLICY</u></b>	<b>REVISED</b> December 2004, October 2006
Resolution No. 327 (10/06)	Supercedes Resolution No.
Policy Number 5.16	<b>PAGE 1 of 8</b>

**1. PURPOSE:**

This policy and its associated procedural guidelines are intended to provide direction to protect all employees who enter and perform work in confined spaces.

**2. LEGISLATION:**

Reference 2006 Occupational Health & Safety Act and Regulations – Construction Projects (O. Reg. 628/05) and Industrial Establishments (O. Reg. 629/05).

**3. INTRODUCTION:**

**Definitions:**

**Confined Space** “confined space” means a fully or partially enclosed space,

- a. that is not both designed and constructed for continuous human occupancy, and
- b. in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it;

**Atmospheric Hazards** “atmospheric hazards” means,

- a. the accumulation of flammable, combustible or explosive agents,
- b. an oxygen content in the atmosphere that is less than 19.5 per cent or more than 23 per cent by volume, or
- c. the accumulation of atmospheric contaminants, including gases, vapours, fumes, dusts or mists, that could,
  - i) result in acute health effects that pose an immediate threat to life, or
  - ii) interfere with a person’s ability to escape unaided from a confined space;

**Confined spaces then, according to the definitions used in the regulations, exist in a wide variety of places within a municipality, including, without exclusivity, the following:**

Chlorine areas	Elevated water storage tanks	Sludge holding tanks
Cisterns	Enclosed filter tanks	Structures on landfill sites
Clarifiers	Maintenance manholes	Sump pump chambers
Clear wells	Meter chambers	Trenches
Covered aeration cells	Reservoirs	Tunnels
Digesters	Septic tanks	Valve chambers
Electrical maintenance holes	Sewers	Water well pits
Electrical vaults	Silos	Wet wells

**4. RESPONSIBILITIES:**

**Supervisor:**

- be familiar with the Occupational Health and Safety Act and applicable regulations and standards
- be familiar with all aspects of the confined space entry program
- be familiar with the actual and potential hazards associated with confined space work
- ensure that the requirements of the program and related elements of the Occupational Health and Safety Act and regulations, and applicable industry standards are applied at all times
- ensure that all employees under their supervision who work in confined spaces are competent to do assigned work and are provided with instructions and training prior to work assignments
- ensure that air monitoring is conducted prior to entering a confined space and a permanent record of the test results are kept
- monitor staff to ensure procedures are followed and when violations occur, take appropriate action
- ensure that all staff use or wear required safety equipment when performing assigned tasks
- provide appropriate machinery and/or equipment needed to carry out work in accordance with legislative requirements, applicable standards and written safe work procedures
- ensure that all equipment needed for confined space work is in good working condition
- assist management in the annual review of equipment status and purchase needs as required

**Gas Tester:**

- confirm what tests are required
- confirm that the equipment is in good working order
- calibrate testing equipment prior to use
- perform test in a competent manner
- advise the supervisor if any hazards are found
- record the results of the tests on the Confined Space Entry permit and retain a copy
- report any problems with the equipment to the Supervisor

**Entrant:**

- be familiar with the Occupational Health and Safety Act and applicable regulations and standards
- work in accordance with legislative requirements, corporate policy and safe working procedures
- attend all relevant confined space training before performing confined space work and apply knowledge gained in the performance of their work
- use or wear all equipment required to safely perform workplace specific activities
- report any violations, hazards or deficiencies in equipment to immediate supervisor without delay
- assist supervisory staff in developing safe work procedures for specific tasks
- follow established procedures in the event of an injury, accident or emergency.

## 5. **CONFINED SPACE HAZARD ASSESSMENT:**

- i) Prior to entering a confined space, ensure that an adequate assessment of the hazards related to the confined space has been carried out by a competent worker.
- ii) The assessment shall be recorded in writing on the **Hazard Assessment Form**.
- iii) If two or more confined spaces are of similar construction and present the same hazards, their assessments may be recorded in a single document, but each confined space shall be clearly identified.
- iv) The assessment shall contain the name of the competent worker, competent worker's signature and the date. The competent worker is to submit the Hazard Assessment Form to the Supervisor.

### **Entry and Control Plan:**

- i) Prior to entering a confined space, ensure that an adequate written plan, including procedures for the control of hazards identified in the assessment has been developed and implemented by a competent person.
- ii) One plan may deal with two or more confined spaces that are similar in construction and present similar provisions.
- ii) The plan shall include procedures for controlling all hazards identified by the assessment. It will also include provisions for:
  - a) The duties of the workers
  - b) Plan specific duties of workers
  - c) Entry permits
  - d) Rescue procedures
  - e) Rescue equipment and methods of communication
  - f) Personal protective equipment, clothing and devices
  - g) Isolation of energy and control of materials movement
  - h) Attendants
  - i) Adequate means of entering and exiting
  - j) Adequate procedures for working in the presence of explosive or flammable substances
  - k) Atmospheric testing

### **Hazard Identification:**

The Superintendent will:

- a) Make every effort to ensure that all identified confined spaces have easy egress from all parts of the confined space.
- b) Investigate any confined spaces identified as one that cannot be purged and ventilated to maintain a safe atmosphere.
- c) Ensure all reasonable changes are made to such confined spaces so it can be properly purged and ventilated.
- d) Do any revisions or changes to the to confined space documentation as necessary.

## 6. **CONFINED SPACE ENTRY PROCEDURE:**

- a) The Supervisor will:
  - i) During initial job scoping, identify any confined spaces involved in the work being planned and will use the Confined Space Hazard Assessment form to plan the confined space entry.

- ii) Assemble for the pre-entry meeting a correct confined space information package including:
  - a. Confined Space Hazard Assessment form
  - b. Attendant Duties
  - c. Lock-out Sheet
  - d. Confined Space Entry Permit
- iii) Determine equipment required from Confined Space Hazard Assessment and identify on Permit.
- iv) Identify responsibilities/tasks of entrants
- v) Start Safe Entry Permit, Hot Work Permit (where necessary) and other required safe permits.
- vi) Prepare copies of Confined Space Entry Information for pre-entry meeting.

### **Pre-entry Meeting:**

The Supervisor will conduct a pre-entry meeting with those who will be involved in the confined space entry. This meeting is to be held within 1 hour prior to the entry or such time that is adequate to brief the workers involved.

At the meeting:

- a) Supply confined space information to the Attendant
- b) Review with the information with all involved
- c) Assign job responsibilities to all workers involved in the entry
- d) Advise Attendant and entrants of the hazards of the confined space and of tasks to be done
- e) Advise Attendant and entrants of the control measures for the hazard.

### **Energy Control:**

In accordance with the entry plan, workers entering confined spaces will be adequately protected against the following:

- a) The release of hazardous substances or energy into the confined space, by capping, disconnecting piping or other adequate means
- b) Against contact with equipment inside the confined space that could endanger the worker, by de-energizing and locking out the equipment or other adequate means
- c) Against drowning, engulfment, entrapment, suffocation and other hazards from free flowing material, by adequate means

### **Safe Entry Permit:**

- i) A separate entry permit is issued each time work is to be performed in a confined space, before any worker enters the confined space.
- ii) The Supervisor of the entrants to the confined space will ensure the Safe Entry Permit is complete, correct, signed and a copy is posted at the confined space entryway.
- iii) The **Entrant** is responsible for reading and understanding the Safe Entry Permit.
- iv) Prior to entry, the confined space must be tested for hazard noted on the Confined Space Entry Permit. A Gas Tester will evaluate the space for each hazard, record the results on the Safe Entry Permit and will certify in writing the air quality at the time of the test is acceptable according to acceptable limits.
- v) Air quality tests must be made before workers enter, at regular intervals as defined in the confined space entry plan and as requested by the entrants. Testing must be done at least once per shift.
- vi) **Supervisors** shall ensure all requirements of the Safe Entry Permit are adhered to, including lock-out procedure, easy egress from all accessible parts of the confined space, and protective measures or other matters affecting safe entry and the well being of the entrants.

vii) A legible copy of the Safe Entry Permit is to be distributed as follows:

- a) Gas Tester doing the testing and evaluation of the confined space
- b) Supervisor of the entrants
- c) Posted at the job site

viii) Atmospheric testing records shall be retained for the following periods:

- a) One year after the document is created; or
- b) The period that is necessary to ensure that at least the two most recent records of each kind that relate to a particular confined space are retained.

ix) For confined spaces with multi-employer involvement, the employer responsible for creating the record shall retain the record.

x) For construction projects, the records must be kept for at least one year after the project is finished.

### **Entering, Exiting, Barricades and Warning Signs:**

An adequate means of entering and exiting all confined spaces will be provided for all workers who may have to perform work tasks within confined spaces.

Whenever work is being performed within a confined space, barricades and/or warning signs regarding unauthorized entry will be installed.

## **7. SAFETY WATCH:**

### **Attendant:**

Any competent person shall be assigned to Safety Watch and shall be familiar with confined Space protocols. The attendant's duties shall consist of the following:

- a. Know the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.
- b. Is aware of possible behavioural effects of hazard exposure.
- c. Continuously maintain an accurate count and identity of authorized personnel.
- d. Remain outside the permit space during entry operations until relieved by another attendant.
- e. Communicate with entrants as necessary to monitor worker status and to alert workers of the need to evacuate.
- f. Monitor activities inside and outside space to determine if safe for workers to remain in space and orders evacuation when necessary.
- g. Summon rescue and emergency services when assistance for emergency exit from permit space is necessary.
- h. Take the following actions when unauthorized persons approach or enter a permit space while entry is underway:
  - 1) Warn them to stay away, or exit immediately if they have entered.
  - 2) Inform the entrants and entry supervisor if unauthorized persons enter the permit space.
- i. Perform non-entry rescues as specified by company procedure.

**Perform no duties that might interfere with their primary duty to monitor and protect authorized entrants.**

## 8. CONFINED SPACE ATMOSPHERIC TESTING:

A qualified worker shall per as atmospheric test:

- a) Before the start of each shift or entry.
- b) If the confined space has been unoccupied for any period of time.
- c) Before a worker re-enters, as often as necessary while any worker remains inside the confined space, to ensure that acceptable atmospheric levels are maintained in the confined space during work activities.

The person performing the atmospheric tests will use calibrated instruments that are in good working order and the results of each test sample shall be recorded on the entry permit.

An atmospheric free from oxygen associated hazards, explosive and flammable substances, and toxic hazards will be arrived at prior to entering any confined space. Ventilation and/or purging methods will be provided and used to ensure acceptable atmospheric levels are maintained in the confined space during work.

### Qualifications for Gas Testers:

Shall receive annual training and in-house certification in atmospheric testing.

## 9. RESCUE PROCEDURE, EQUIPMENT AND METHODS OF COMMUNICATION:

If a worker may be required to enter a confined space, The Town of Fort Frances shall provide an adequate number of workers trained in:

- First aid and cardio-pulmonary resuscitation
- The use of rescue equipment appropriate for entry into the confined space and
- The on-site rescue procedures

### Rescue Procedure:

In the event that an employee is overcome or disable while in the confined space:

- a. Non-entry rescue is the preferred method for rescue of personnel from a permit-required space. **Employees will not enter a permit space for rescue unless they have been specifically trained and equipped for such rescue.**
- b. To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enter a permit space, unless the retrieval equipment would increase overall risk of entry or would not be of value to any rescue.
- c. Monitor the situation and be ready to give rescuers information on how many victims and their status, what hazards, chemical types, concentrations, etc. are present.
- d. Contact Dispatch to activate Emergency Medical Services, as appropriate
- e. Perform any necessary First Aid, once employee has been extracted
- f. Any time an employee loses consciousness, the employee must receive professional medical treatment as soon as possible

**Steps to take if emergency occurs:**

Check if person conscious by shouting, radio, rope tugging, etc.

**If Conscious**

Contact Fire Service as needed

Attempt retrieval with retrieval equipment

First aid measures

**Not Conscious**

Contact Fire Service 911

Attempt retrieval with retrieval equipment

**DO NOT ENTER SPACE**

**Retrieval System Requirements Are:**

1. Each entrant shall use a chest or full body harness, with a retrieval line attached at the centre of the back near shoulder level, or other appropriate point.
2. Other end of retrieval line shall be attached to a mechanical device or fixed point outside of permit space enabling immediate use. A mechanical device will be used to retrieve personnel from vertical type permit spaces more than five feet deep.
3. If injured entrant is exposed to any substance with a required MSDS, that MSDS will be made available to the medical facility that will be treating the entrant.
4. Only designated personnel will enter permit spaces for rescue purposes. Each designated rescue team member will be trained on:
  - a. Use of personal protective and rescue equipment necessary for making the rescue from the permit space;
  - b. Performance of assigned rescue duties and also that training required of authorized entrants;
  - c. Basic first-aid and cardiopulmonary resuscitation (CPR). At least one member of the rescue team will hold current certification in first aid and CPR.

**Rescue Equipment:**

**Procedures:**

1. The rescue equipment must be:
  - Readily available to effect a rescue in the confined space
  - Is appropriate for entry into the confined space
  - Is in good working order
2. Methods of communication will exist that is appropriate for the hazards identified in the relevant assessment and shall ensure that it is readily available for workers to communicate with the attendants described
3. All rescue equipment must be inspected by a competent person as often as is necessary to make certain that it is in good working order
4. Written records of the inspections must be kept

**Rescue equipment includes approved:**

- Harness or wristlets,
- Retrieval lines and
- Mechanical lifting devices.

**Process:**

- 1.) The free end of a lifeline attached to the harness should be secured outside the space and under the control of the attendant.
- 2.) A proper harness and hoisting system will aid in rescue.
- 3.) All hoisting components must be capable of supporting and immediately retrieving a worker at any time.
- 4.) Hoists should be equipped with a brake mechanism to allow for immediate fall arrest.
- 5.) It is crucial that the only members that perform rescue procedures are those that have received rescue training for confined space.

**Equipment outside the space:**

- Self-contained breathing apparatus.
- Safety harness
- Rope
- Suitable reviving apparatus outside the space.

**10. TRAINING:**

Every worker who will be required to perform tasks within confined spaces shall be adequately trained to recognize hazards associated to confined spaces and be able to make competent decisions for the performing of safe work tasks. Entrants, Safety Watches and Supervisors have different functions to perform during confined space entries.

Training shall be reviewed any time there has been a change in circumstances that may affect the safety of a worker who enters a confined space in the workplace and in any case once a year.

Plan specific training will be ensured in such a manner that every worker who performs work in confined spaces is adequately trained in accordance the Occupational Health & Safety Act and Regulations.

Up to date written records showing who provided training, who received training and what specific training they received shall be kept on file for a minimum of one (1) year.

**11. STANDARD FORMS:**

- a) Confined Space Hazard Assessment Form
- b) Confined Space Entry Permit
- c) Hot Work Permit
- d) Full Body Harness Check List