

SECTION: Joint Health & Safety		GUIDELINE #: JHS-010
Date Approved: December 19, 2011		Confined Space Plan
Revision Date:	Review Date:	
Authority: Report DCS-33-11		

1. PURPOSE

- A. To create a guideline whereby employees can work safely in a designated confined space.
- B. To assure that the Occupational Health and Safety Act and specifically Regulation 632/05 "Confined Spaces" is complied with.
- C. To train employees as per Regulation 632/05 "Confined Spaces" so that they are able to recognize hazards associated with confined spaces, to respond to anticipated hazards and emergencies, and to perform assigned duties in conformance to established confined space entry guidelines.
- D. To protect employees from hazards that could be present in confined spaces.
- E. To initiate a rescue program in the event that such may be required.

2. DEFINING CONFINED SPACES

- A. The Occupational Health and Safety Act, Regulation 632/05 defines "**confined space**" as:
"a fully or partially confined space,
 - 1. that is not both designed and constructed for continuous human occupancy,
 - 2. in which atmospheric hazards may occur because of construction, location or contents or because of work that is done in it;"
- B. A confined space must meet the requirements of the following three criteria:
 - 1. restricted access
 - 2. not designed and constructed for continuous human occupancy
 - 3. potential for atmospheric hazard
- C. The Occupational Health and Safety Act, Regulation 632/05 defines "**atmospheric hazard**" as:
 - 1. the accumulation of flammable, combustible or explosive agents,
 - 2. an oxygen content in the atmosphere that is less than 18 percent or more than 23 percent by volume, or
 - 3. 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,"

3. CONFINED SPACES AS PER DEFINITION

As per the confined space definition the following are the only confined spaces for the Town of Hanover:

- 1. Sanitary and Storm Manholes
- 2. Sewage Pumping Stations
- 3. Digesters at Water Pollution Control Plant

4. ASSESSMENT OF CONFINED SPACE

- A. A worker shall not enter a confined space until a "Confined Space Entry Permit" documentation is completed.
- B. Testing is completed and documented to ensure safe limits of the following:
 - 1. oxygen (O₂) in % (oxygen content in the atmosphere to be between 19.3% and 23% by volume)
 - 2. combustible gases (LEL) in % (reading to be less than 10%)
 - 3. hydrogen sulphide (H₂S) in ppm (reading to be less than 10ppm)
 - 4. carbon monoxide (CO) in ppm (reading to be less than 25 ppm)
- C. If entry must be made and safe conditions cannot be met, self-contained breathing apparatus (S.C.B.A.) must be worn by all personnel entering the confined space.
- D. Sufficient personnel and equipment shall be maintained at the access opening to remove the person(s) from the confined space should the need arise.

5. ENTRY PROCEDURE

A worker shall not enter a confined space unless:

- A. the removal of any cover of a confined space is done with correct tools to prevent back injuries or the occurrence of a spark;
- B. the atmosphere is continually monitored for oxygen deficiency, hydrogen sulphide, explosive gases and carbon monoxide; and
- C. he/she is wearing an approved body harness attached to a rope (ensures maximum ability for a quick retrieval without injury); and
- D. a second competent person shall be stationed outside the nearest entrance to the confined space at all times, whose duty it is to remain in constant communications with the entry worker. In case of emergency, the person outside the space shall have readily available:
 - i) suitable communications to summon emergency (cellphone or landline phone, if at facility)
 - ii) a rope of sufficient length or a suitable lifting device
- E. if entry is to be made where vehicular traffic is a hazard, the following are required:
 - i) all employees will have a fluorescent blaze vest, shirt or coat with fluorescent stripes front and back that meets current Occupational Health and Safety Act standards.
 - ii) cones or delineators and traffic control as per Book 7 Ontario Traffic Manual for Temporary Conditions

6. TESTING / RECORDING REQUIREMENTS

- A. A worker shall not enter a confined space unless sufficient tests are made for oxygen deficiency, combustibles and hydrogen sulphide.
- B. In a closed confined space a test for combustibles must be carried out prior to removing the cover if possible (i.e. through the pick holes of a manhole). This testing would be for the following hazards, listed in order:
 - i) oxygen deficiency or enrichment
 - ii) combustibles/flammables
 - iii) toxics
- C. Continual monitoring of the atmosphere must be carried out while the worker is in a confined space. Monitoring equipment shall have an audible alarm. When the device sounds an alarm, the worker(s) shall leave the area immediately.

- D. A worker shall not enter a confined space unless the results of each test are recorded on the Confined Space Entry Permit. This permit must be fully completed. (This is a Ministry of Labour requirement). This record will be filed for future reference and documentation.
- E. Test results must be recorded prior to entry, every two hours when confined space is occupied and upon leaving the confined space.
- F. The person taking the readings must place his/her signature on the record.
- G. All records for confined space entry shall be kept for at least five years.

7. EMERGENCY RESCUE

- A. During an emergency, an unusual event has happened that renders the confined space dangerous to human activity within it.
- B. It is essential that emergency services (fire and ambulance) be alerted to the emergency as early as possible.
- C. If an employee is in the confined space and the monitor alarm sounds he/she must leave the area immediately.
- D. In the event of an emergency situation the person stationed outside the confined space shall:
 - i) Telephone 911 EMERGENCY to the dispatcher clearly stating the following:
 - a) "My name is _____ and I work for _____."
 - b) "I have a confined space emergency."
 - c) "My location is _____ facility _____ on _____ street _____."
 - d) "My civic address is _____ number _____ on _____ street _____"
 - e) "I need the Fire Department and Ambulance to respond."
 - ii) If the entry worker is attached to retrieval equipment, the person outside the confined space shall attempt to raise him/her to the surface and provide the appropriate assistance until help arrives.
 - iii) **Under no circumstances shall any worker enter a confined space to attempt a rescue until help arrives.**

8. TRAINING

Every worker who works in a confined space must receive adequate training in the recognition of hazards associated with confined spaces and training to be able to safely perform the assigned duties for that specific confined space. Training is also required for persons contributing to the work activity, even those not entering the confined space, for example, attendants and rescue workers.

- A. Training shall be developed in consultation with the joint Health and Safety Committee.
- B. Training shall be provided to all staff entering confined spaces and address the following:
 - i) recognize, understand and interpret the assessment of confined spaces
 - ii) understand the associated hazards
 - iii) know the required safety equipment
 - iv) operate the atmospheric monitoring equipment
 - v) execute the safe entry, safe work and rescue as required
 - vi) be capable of administering First Aid and CPR
- C. All staff entering confined spaces shall be provided with certified confined space training by an outside agency every five years.
- D. All staff shall review the Confined Space Plan and ensure that hands-on training with the safety equipment including personal protective equipment and safety harnesses is completed on an annual basis.

CONFINED SPACE ENTRY PERMIT

SECTION A: General Entry Information

1. Location: _____
2. Work to be performed: _____
3. Date/Time Permit Issued: _____
4. Permit Duration: _____
5. Permit Completed by: _____
6. Confined Space Participants

Entrant(s): _____

Attendant(s): _____

SECTION B: Identify Hazards/Control Measures:

7. Identify hazards and control measures used

<u>Potential Hazard</u>	<u>Yes</u>	<u>No</u>	<u>Control Measure</u>	<u>Yes</u>	<u>No</u>
Oxygen Deficiency/Enrichment	_____	_____	Multi-gas Detector	_____	_____
Combustible Methane	_____	_____	Full Body Harness and Life Line	_____	_____
Carbon Monoxide	_____	_____	Two-Way Radios	_____	_____
Hydrogen Sulphide	_____	_____	Cell Phone	_____	_____
Mechanical Moving Parts	_____	_____	Respirator	_____	_____
Electrical energy endangering	_____	_____	Traffic Protection	_____	_____
Materials harmful to skin	_____	_____	Gloves	_____	_____
			Protective Clothing	_____	_____
			Eye Protection	_____	_____

SECTION C: Atmospheric Testing and Monitoring Record

Time	Record of Entry Conditions *			
	Oxygen (19.5% to 23.3%)	Combustible Gases (LEL of less than 10%)	Hydrogen Sulphide (less than 10ppm)	Carbon Monoxide (less than 25ppm)

* Atmospheric testing to be completed prior to entry, every two hours when confined space is occupied and upon leaving the confined space.

Atmospheric Testing Equipment:

Make: _____

Mode #: _____

Date of Last Calibration: _____