

# LEVEL 2: CONFINED SPACE

## Entry Procedures

**CONTRACTORS:** Contractors working in crawlspaces on divisional property must be informed of the dangers, be trained in confined space entry and comply with the requirements of the entry system. It is the responsibility of the supervisor who contacted the contractor to notify, verify training, brief, and provide a copy of this safe work procedure to any contractor working in a crawlspace in the division. It is the contractor's responsibility to ensure all their staff are trained in CSE, inform all workers under his control and any subcontractors of specific crawlspace hazards. Briefings must be documented and records maintained.

**Note:** Contractors or trades staff will require a separate pre-entry hazard evaluation form to be completed and submitted to the Pembina Trails supervisor/safety officer prior to entry. All confined spaces have the potential to become a high hazard (IDHL) confined space depending upon the work activity being carried out in the space.

**IDENTIFIED HAZARDS** – Level 2 confined spaces pose all the same risks as Level 1 restricted spaces. However, access is restricted due to small hatch openings into the space. Egress is restricted due to a low ceiling, low pipes, physical obstacles, and ducting. The space may contain noise, asbestos, radon gas, animal traps, animal feces, standing water, steam, high humidity, temperature extremes, mold, damp soil, etc. Atmospheric monitoring is always required.

### **PERSONAL PROTECTIVE EQUIPMENT:**

Hard hat / bumper cap, full body harness, safety shoes, safety glasses, work gloves or disposable nitrile gloves, coveralls, N-95 dust mask (if required) or P-100 respirator (where required), multi gas detector, door signage, portable hatch guardrail system (if the hatch is located in a hallway or classroom). Ensure you have a flashlight or other means of portable illumination with you at all times.

### **TWO PERSON ENTRY IS MANDATORY:**

A two person entry is required. An entry supervisor must be stationed outside the hatch and must remain there until all work has been completed. Radio contact with the person entering the crawl space must be maintained at all times. If radio contact is not possible then voice contact must be maintained at all times. **At no time is the entry supervisor allowed to enter the crawlspace.**

### **ENTRY PROCEDURE:**

1. Don all personal protective equipment listed above. Take a flashlight or other type of portable illumination.
2. If your crawl space entrance is located behind a closed door, place the "confined space entry in progress" sign and chain across the opening to the space to prevent anyone from entering while the hatch is open. If your crawl space entrance is located in a classroom, hallway or other space acceptable by students/staff/public, place the portable guardrail around the entrance to prevent unauthorized access.
3. Turn on multi gas detector and complete fresh air calibration.
4. Print your name, date and the time on the "Confined Space Entry Permit" that is posted on the crawlspace entry hatch.
5. Open the hatch and turn on the lights. Ensure the crawlspace hatch cannot be closed while you are in the crawlspace. Place a lockout on the hasp so that it cannot be locked shut.
6. Test the air in the space at the entrance. Lower the gas monitor into the space and continue to test the air. If the detector alarms at any time, do not enter the space. Contact your supervisor. Document the gas monitor reading on the permit. Acceptable levels for entry:
  - Oxygen – 19.5% - 23%
  - CO – less than 25ppm (low alarm), short term exposure (15min) – 100 ppm; TWA (over 8hrs) – 25ppm
  - H2S – less than 1.0ppm (low alarm), short term exposure (15min) – 5ppm, TWA (over 8 hrs) – 10ppm
  - Flammables / Explosives – Lower explosive level 10%, upper explosive level 20%
7. If the air sampling in step 7 is normal, secure the gas detector in a location on your person but away from your breathing zone and enter the space to begin work. Complete your work and remove all debris and garbage. No combustible materials are allowed to be left / stored in a crawl space (fire code requirement).
8. **Do not enter** crawlspaces that have standing (black) water as the water may release hydrogen sulfide gas when disturbed. If standing water is present contact the maintenance shop. Someone will be assigned to pump out the water and test the air.
9. You must keep in constant contact with the "entry supervisor" at all times.
10. If the alarm sounds at any time the worker **MUST** leave the space immediately and call their supervisor. **DO NOT** turn off the gas monitor once you have exited the space. Your supervisor will need to review the exposure information logged in the monitor.
11. Exit the crawlspace and remove the lockout device on the door / hatch. Close the door and secure it in place.
12. Immediately upon exiting the hatch, remove your Tyvek, booties, gloves and respirator and dispose of into separate garbage. Proceed to the closest washroom and wash your hands and face. If a half mask respirator was used, clean and store it appropriately.
13. Sign out of the crawlspace by entering your exit time and peak gas monitor readings on the permit form. Using the down arrow on the gas monitor, press the button twice to reach the peak exposure page.
14. Remove the signage from the door and/or guardrails and store for future use.

### **RESCUE:**

1. Self-Rescue – Entrant is physically and mentally capable of exiting the space without assistance. To be used if the gas detector alarm/ventilation alarm activates or signs and symptoms of exposure to a hazard are recognized and an evacuation is required. Immediately upon exit notify your supervisor and Safety Officer.
2. If self-rescue is not possible, call 911. Notify the workers supervisor and the Divisional Safety Officer. **DO NOT** enter the space to attempt rescue.

**The level of risk may increase due to the task being performed in the crawlspace. E.g. "Level 2" crawlspace may become a confined space due to fugitive emissions from welding or the displacement of oxygen. A confined space may be entered only by qualified and authorized personnel. A separate entry permit is also required. Please see the divisional Safety Officer for further information.**