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**Chapter 296-809 WAC**  
**Safety Standards for Confined Spaces**  
**(Form Number F414-068-000)**

This book contains rules for Safety Standards for confined spaces, as adopted under the Washington Industrial Safety and Health Act of 1973 (Chapter 49.17 RCW).

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# Chapter 296-809 WAC

## Safety Standards for Confined Spaces

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## **WAC 296-809-099 Definitions.**

**Acceptable entry conditions.** The conditions that must exist in a permit-required confined space to allow safe entry and work.

**Alternative methods.** Permit-required confined space using alternative methods. An alternative process for entering a permit space under very specific conditions outlined in WAC 296-809-60002 and 296-809-60004. The employer must complete documentation as required to communicate to the workers the space conditions. For an example, see [Appendix J Alternative Method Documentation](#).

**Atmospheric hazard.** See definition of hazardous atmosphere.

**Atmospheric testing.** See definition of monitoring or testing.

**Attendant.** An individual stationed outside one or more permit-required confined spaces to monitor the entrants. Attendants must perform the duties required in WAC 296-809-50020.

**Barrier.** A physical obstruction that blocks or limits access.

**Blanking or blinding.** The absolute closure of a pipe, line, or duct by fastening a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore. It is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

**Calibration.** Checking a direct reading instrument against an accurate standard such as a calibration gas to determine deviation and correct for analytical errors.

**Competent person.** A person capable of identifying existing and predictable hazards in the surroundings or working conditions including those that are unsanitary, hazardous, or dangerous to employees, and has the authorization to take prompt corrective measures to eliminate them. They must be knowledgeable in this chapter.

**Confined space.** A space that is **all** of the following:

- (a) Large enough and arranged so an employee could fully enter the space and work.
- (b) Has limited or restricted entry or exit. Examples of spaces with limited or restricted entry are tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits.
- (c) Not primarily designed for continuous human occupancy.

**Note:** See [Appendix A Frequently Asked Questions and Examples for Confined Spaces](#).

**Control.** The action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, ventilation), and then using these methods effectively to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

**Controlling contractor (employer).** The employer that has overall responsibility for construction at the worksite. If the controlling contractor (employer) owns or manages the property, then it is both a controlling employer and a host employer.

**Double block and bleed.** The closure of a line, duct, or pipe by closing and locking or tagging 2 in-line valves and by opening and locking or tagging a drain or vent valve in the line between the 2 closed valves. See also chapter [296-803 WAC](#), Lockout/tagout (control of hazardous energy).

**Early-warning system.** The method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include: Alarms

activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

**Emergency.** Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit-required confined space that could endanger authorized entrants.

**Energy-isolating device.** A mechanical device that physically prevents transmitting or releasing energy. This includes, but is not limited to:

- Manually operated electrical circuit breakers.
- Disconnect switches.
- Manually operated switches that disconnect the conductors of a circuit from all ungrounded supply conductors if no pole of the switch can be operated independently.
- Line valves.
- Blocks.
- Similar devices.

**Note:** Push button, selector switches and other control circuit-type devices are not energy isolating devices.

**Engulfment.** The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be inhaled to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

**Enter (entry).** The action where any part of a person's body breaks the plane (passes through an opening) into a confined space. Entry occurs as soon as any part of the entrant's body breaks the plane of the opening into the space whether or not such action is intentional or any work activities are actually performed in the space.

**Note:** When the opening is large enough for the worker to fully enter the space, a permit is required even for partial body entry. Permits are not required for partial body entry, where the opening is not large enough for full entry, although other rules such as chapter [296-803 WAC](#), Lockout/tagout (control of hazardous energy), and chapter [296-841 WAC](#), Airborne contaminants may apply.

**Entrant.** An employee who is authorized by the employer to enter a permit-required confined space.

**Entry employer.** Any employer who has an employee enter a permit space.

**Note:** An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space. DOSH considers the failure to decide as an implicit decision to allow employees to enter those spaces, if they are working in the proximity of the space without the required worker protections.

**Entry permit (permit).** The written or printed document that is provided by you to allow and control entry into a permit-required confined space and that contains the information required in WAC 296-809-500, Permit entry procedures.

**Entry rescue.** Occurs when a rescue service enters a permit space to rescue one or more employees.

**Entry supervisor.** The qualified and trained person (such as the employer, crew leader, or crew chief) responsible for identifying permit-required confined spaces and performing responsibilities and job duties as outlined by WAC 296-809-50018. For example:

- (a) Determining if acceptable entry conditions are present at a permit-required confined space where entry is planned;
- (b) Authorizing entry and overseeing entry operations; and
- (c) Terminating entry as required by this standard.

**Note:** An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. The duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

**Hazard.** A physical hazard or hazardous atmosphere. See definitions below.

**Hazardous atmosphere.** An atmosphere that may expose employees to the risk of death, incapacitation, impair their ability to self-rescue (escape unaided from a permit-required confined space), injury, or acute illness caused by one or more of the following:

- (a) Flammable gas, vapor, or mist in excess of ten percent of its lower flammable limit (LFL) or lower explosive limit (LEL).
- (b) Airborne combustible dust at a concentration that meets or exceeds its LFL. The concentration may be approximated as a condition in which the dust obscures vision at a distance of five feet (1.52 m) or less.
- (c) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.<sup>1</sup>
- (d) Atmospheric concentration of any substance which may exceed a permissible exposure limit. (PEL)<sup>2</sup>.
- (e) Any other atmospheric condition that is immediately dangerous to life or health<sup>3</sup>.

**Notes:**

<sup>1</sup> 1 percent (%) = 10,000 parts per million (ppm).

<sup>2</sup> For additional information about atmospheric concentration, see chapter [296-62 WAC](#), General occupational health standards, Parts F, G, and I, and chapter [296-841](#) Airborne contaminants.

<sup>3</sup> For immediately dangerous to life or health values see <http://www.cdc.gov/niosh/idlh/idlhintr.html>.

An airborne concentration of a substance that is not capable of causing death, incapacitation, impairment to self-rescue, injury or acute illness due to its health effects is not covered by this definition.

For air contaminants, that have no WISHA-determined doses or permissible exposure limits (PELs) use other sources of information that can provide guidance in establishing acceptable atmospheric conditions, such as: Safety data sheets required by WAC [296-901-14014](#), published information and internal documents.

**Hazard elimination.** The temporary or permanent action taken to remove a hazard from the work environment. For confined spaces, this definition includes isolation. It does not include the use of forced air ventilation. For a hazard to be considered eliminated, the conditions that create or cause the hazard must no longer exist within the confined space.

**Host employer.** The employer that owns or manages the property where the work is taking place. In no case will there be more than one host employer.

**Note:** If the owner of the property on which the construction activity occurs has contracted in writing with an entity for the general management of that property and has in writing transferred to that entity the information specified in WAC 296-809-20006, DOSH will treat the contracted management entity as the host employer for as long as that entity manages the property. Otherwise, DOSH will treat the owner of the property as the host employer.

**Hot work.** Operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating).

**Hot work permit.** A written authorization to perform hot work operations, for example, riveting, welding, cutting, burning, and heating, that can provide a source of ignition.

**Immediately dangerous to life or health (IDLH).** Any of the following conditions:

- (a) An immediate or delayed threat to life.
- (b) Anything that would cause irreversible adverse health effects.
- (c) Anything that would interfere with an individual's ability to escape unaided from a permit-required confined space.

**Notes:** Some materials - hydrogen fluoride gas and cadmium vapor, for example - may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12 to 72 hours after exposure. The victim “feels normal” after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be “immediately” dangerous to life or health (IDLH).  
For immediately dangerous to life or health values see <http://www.cdc.gov/niosh/idlh/idlhintr.html>.

**Inerting.** The displacement of the atmosphere in a permit-required confined space by a noncombustible gas (such as nitrogen or argon) to such an extent that the resulting atmosphere is noncombustible. Inerting produces an IDLH oxygen-deficient atmosphere.

**Isolation.** The process of removing a permit-required confined space from service and completely protecting the employees against the release of energy and material into the space by:

- Blanking or blinding;
- Misaligning or removing sections of lines, pipes, or ducts;
- Double block and bleed system;
- Machine guarding;
- Blocking or disconnecting all mechanical linkages;
- Placement of barriers to eliminate the potential for employee contact with a physical hazard; or
- Lockout of all sources of energy.

**Note:** When using lockout, you must follow all the requirements of chapter [296-803](#) WAC, Lockout/tagout (control of hazardous energy).

**Limited or restricted means of entry or exit.** A condition that has a potential to impede an employee's movement into or out of a confined space. A space has limited or restricted means of entry or exit, if an entrant's ability to escape in an emergency would be hindered. Examples include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

**Line breaking.** The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

**Lockout.** Placing a lockout device on an energy-isolating device using an established procedure to make sure the machine or equipment cannot be operated until the lockout device is removed. For more information, see chapter [296-803](#) WAC, Lockout/tagout (control of hazardous energy).

**Lockout device.** A device that uses a positive means, such as a key or combination lock, to hold an energy-isolating device in the “safe” or “off” position. This includes blank flanges and bolted slip blinds.

**Lower flammable limit (LFL) or lower explosive limit (LEL).** The minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

**Mobile worker.** An employee who performs work in multiple locations such as: Customer sites, company offices, private homes, vendor offices, or construction sites.

**Monitor or monitoring (see also testing).** The process used to identify and evaluate a potential hazardous atmosphere after an authorized entrant enters the space. This process checks for atmospheric changes. It is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

**Nonentry rescue.** Retrieval of an entrant from a permit-required space without entering the permit space.

**Nonpermit confined space.** You will find the requirements for a nonpermit confined space in WAC 296-809-600.

**Oxygen deficient atmosphere.** An atmosphere containing less than 19.5 percent oxygen by volume.

**Oxygen enriched atmosphere.** An atmosphere containing more than 23.5 percent oxygen by volume.

**Permit-required confined space or permit space.** A confined space that has one or more of the following characteristics capable of causing death or serious physical harm:

- (a) Contains or has a potential to contain a hazardous atmosphere;
- (b) Contains a material with the potential for engulfing someone who enters;
- (c) Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section;
- (d) Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts;
- (e) Contains any other recognized serious safety or health hazard that could either:
  - (i) Impair the ability to self-rescue; or
  - (ii) Result in a situation that presents an immediate danger to life or health.

See [Appendix B Examples of Permit-Required Confined Space Hazards](#).

**Permit-required confined space program (also known as a confined space program).** An overall program for:

- (a) Controlling and appropriately protecting employees from permit-required confined space hazards; and
- (b) Regulating employee entry into permit-required confined spaces.

**Physical hazard.** An existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: Explosives (as defined by WAC [296-52-60130](#)); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazards also include chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

**Potential hazards.** All reasonable anticipated conditions within a space and outside the space that can adversely affect the conditions within the space.

**Program administrator.** The person who has overall responsibility for your program and has sufficient training or experience with permit-required confined space entry to oversee program

development, coordinate implementation, and conduct required evaluations of program effectiveness outlined in WAC 296-809-50006.

**Prohibited condition.** Any condition in a permit-required confined space not allowed by the permit during the authorized entry period. For example: A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

**Qualified person.** A person who has successfully demonstrated the ability to solve problems relating to the subject matter, work, or project, either by:

- Possession of recognized degree, certificate, or professional standing; or
- Extensive knowledge, training and experience.

**Representative permit space.** A mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

**Rescue.** Retrieving and providing medical assistance to one or more employees in a permit space.

**Rescue service.** The personnel designated to rescue employees from permit-required confined spaces.

**Retrieval system.** The equipment used for nonentry rescue of persons from permit-required confined spaces including; a retrieval line, chest or full-body harness, wristlets or anklets if appropriate, and a lifting device or anchor.

**Serious physical damage.** An impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health care professional.

**Tagout.**

- (a) Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and
- (b) The employer ensures that:
  - (i) Tagout provides equivalent protection to lockout; or
  - (ii) Lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

**Testing (see also monitoring).** The process of identifying and evaluating the hazards that entrants may be exposed to in a permit-required confined space. Testing includes specifying the initial atmospheric tests that are to be performed in the permit-required confined space.

**Note:** Testing allows employers to devise and implement adequate controls to protect entrants during entry, and to determine if acceptable entry conditions are present.

**Ventilate or ventilation.** The process of controlling a hazardous atmosphere using continuous forced-air mechanical systems. Ventilation is a method of hazard control, not hazard elimination.

## WAC 296-809-100 Scope.

This chapter applies to all confined spaces and provides requirements to protect employees from the hazards of entering and working in confined spaces. This chapter applies in any of the following circumstances:

- (1) You have confined spaces in your workplace.
- (2) Your employees will enter another employer's confined spaces.
- (3) A contractor will enter your confined spaces.
- (4) You provide confined space rescue services.

You can use Table 1 to help you decide which requirements to follow for confined spaces.

**Table 1 Requirements for Confined Spaces**

For confined spaces that are	The requirements in the following sections apply					
	200	300	400	500	600	
Permit-required confined spaces.	X	X	X	X	X	
Permit-required confined spaces entered by a contractor (or other outside employer).	X	X	X	X	X	
Alternative methods.	X	X	X		X	
Never entered	X					
<b>If you only:</b>						
Have a contractor (or outside employer) enter your space, and you never enter yourself.	X					
Are a rescue service provider		X	X	X		

**Note:**

Requirements in other chapters may apply to your work. You can find a list of these rules in [Appendix C Rules in Other Chapters that Cover Confined Spaces](#). You will find some safety and health requirements addressed on a broad level in this chapter, while being addressed for a specific application in another rule. When this happens, both requirements apply and should not conflict. When a conflict does occur, you need to follow the more specific requirement.

**WAC 296-809-200 Identify and control entry into permit-required confined spaces.**

**Your responsibility:** To identify your permit-required confined spaces and control entry.

<b>You must meet the requirements...</b>	<b>in this section:</b>
Identify permit-required confined spaces	<a href="#">WAC 296-809-20002</a>
Inform employees and control entry to permit-required confined spaces	<a href="#">WAC 296-809-20004</a>
Follow these requirements when you contract with another employer to enter your confined space	<a href="#">WAC 296-809-20006</a>

**WAC 296-809-20002 Identify permit-required confined spaces.**

You must identify all permit-required confined spaces in your workplace. Use a person with the knowledge, skills, and abilities, capable of identifying actual and potential hazards related to permit-required confined spaces and with the authority to take prompt corrective action, such as an entry supervisor or competent person.

<b>Important:</b>
<p><b>Identification of Permit-Required Confined Space(s) involves a two-step process.</b></p> <p><b>Step 1:</b> Identify confined spaces.</p> <p><b>Confined space.</b> A space that is <b>all</b> of the following:</p> <ul style="list-style-type: none"> <li>• Large enough and arranged so an employee could fully enter the space and work.</li> <li>• Has limited or restricted entry or exit. Examples of spaces with limited or restricted entry are tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits.</li> <li>• Not primarily designed for continuous human occupancy.</li> </ul> <p>See <a href="#">Appendix A Frequently Asked Questions and Examples of Confined Spaces</a></p> <p><b>Step 2:</b> Evaluate the actual and potential hazards of each confined space to identify the permit-required confined space(s).</p> <p><b>Permit-required confined space or permit space.</b> A confined space that has one or more of the following characteristics capable of causing death or serious physical harm.</p> <ul style="list-style-type: none"> <li>• Contains or has a potential to contain a hazardous atmosphere.</li> <li>• Contains a material with the potential for engulfing someone who enters.</li> </ul>

**Important:**

- Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section.
- Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.
- Contains any other recognized serious safety or health hazard that could either:
  - (a) Impair the ability to self-rescue; or
  - (b) Result in a situation that presents an immediate danger to life or health.

See [Appendix B Examples of Permit-Required Confined Space Hazards](#)

### **WAC 296-809-20004 Inform employees and control entry to permit-required confined spaces.**

- (1) You must provide information about confined spaces as follows:
  - (a) Make available to affected employees and their authorized representatives all information and documents required by this chapter.
  - (b) Inform affected employees about the existence, location, and danger of any permit-required confined spaces in your workplace by:
    - (i) Posting danger signs;<sup>1</sup> or
    - (ii) Using any other equally effective means to inform employees.<sup>2</sup>
- (2) You must take effective measures to prevent unauthorized employees from entering permit-required confined spaces<sup>3</sup>.

**Notes:**

<sup>1</sup> A sign reading “Danger-Permit Required Confined Space, DO NOT ENTER” or using pictures or other similar wording employees can understand would satisfy the requirement for a sign.

<sup>2</sup> Equally effective means must warn employees about the existence, location and danger of permit-required confined spaces for all affected employees.

<sup>3</sup> Examples of measures to prevent employee entry include: padlocks, bolted covers, use of special tools to remove covers along with, employee training, and permanently closing the space, such as welding it closed.

### **WAC 296-809-20006 Follow these requirements when you contract with another employer to enter your confined space.**

You must do **all** of the following if you arrange to have another employer (contractor) perform work that involves entry into your permit-required confined space:

- (1) Inform the contractor:

- (a) That the workplace contains permit-required confined spaces and entry is allowed only if the applicable requirements of this chapter are met.
  - (b) Of the identified hazards and your experience with each permit-required confined space.
  - (c) Of any precautions or procedures you require for the protection of employees in or near spaces where the contractor will be working.
- (2) Coordinate entry operations with the contractor, when either employees or employers from the different companies will be working in or near permit-required confined spaces.
- (3) Discuss entry operations with the contractor when they are complete. Include the following in your discussion:
- (a) The program followed during confined space entry; and
  - (b) Any hazards confronted or created.

**Note:** All employers are responsible for following confined space requirements in this chapter and in other chapters that apply.

**WAC 296-809-300 Permit-required confined space program.**

**Your responsibility:** To develop your permit-required confined space program and practices.

**Important:**

This section applies if employees will enter a permit-required confined space.

<i><b>Before your employees enter you must meet these requirements...</b></i>	<i><b>in this section:</b></i>
Develop a written permit-required confined space program	<a href="#"><u>WAC 296-809-30002</u></a>
Meet these additional requirements if your employees enter another employer's confined space	<a href="#"><u>WAC 296-809-30004</u></a>

**WAC 296-809-30002 Develop a written permit-required confined space program.**

**Important:**

Identify and evaluate the hazards of permit-required confined spaces and the work performed, to assist you in developing your entry program and entry procedures.

- (1) You must develop a written program, before employees enter confined spaces, that describes the means, procedures, and practices you use for the safe entry of permit-required confined spaces as required by this chapter. Include the following:
- (a) Documentation of permit entry procedures<sup>1</sup>.

- 
- (b) Designation of employees that have active roles, including; attendants, competent persons, entrants, entry supervisors, rescuers, program administrator, or those who test or monitor the atmosphere in a permit-required space.
  - (c) Identification of each designated employee's duties.
  - (d) Training employees on their designated roles.
  - (e) How to identify and evaluate hazards.
  - (f) Use and maintenance of equipment.
  - (g) How to prevent unauthorized entry.
  - (h) How to coordinate entry with another employer.
  - (i) How to rescue entrants.
  - (j) If you intend to enter using alternative methods for entry, the procedures must address all measures used before entry to isolate and eliminate hazards from the space and control potential atmospheric hazards.
    - (i) Identify the entry supervisor who authorize the use of the alternative methods and has the responsibility for ensuring safe entry conditions.
    - (ii) The hazards of the space.
    - (iii) The methods used to eliminate hazards including verification.
    - (iv) The methods used to ensure that the hazards are eliminated.
    - (v) The methods used to test and monitor the atmosphere within the space, where applicable, for all atmospheric hazards.
    - (vi) The methods used to determine if unsafe conditions arise before or during entry.
    - (vii) The criteria and conditions for evacuating the space during entry (like monitoring and test data).
    - (viii) Methods for training employees in these procedures.
    - (ix) The methods used to ensure employees follow these procedures.
    - (x) Documentation required. For examples of documentation, see [Appendix J Alternative Method Documentation](#)
- (2) You must consult with affected employees and their authorized representatives when developing and implementing all aspects of your program.
  - (3) You must make the written program available to employees and their authorized representatives.
  - (4) You must update your written program as necessary when you have identified deficiencies. Revise your program and entry procedures before allowing subsequent entries.
  - (5) You must designate a confined space program administrator who has overall responsibility for your program and has sufficient training or experience with permit-required confined space entry to oversee program development, coordinate implementation, and conduct required evaluations of program effectiveness outlined in WAC 296-809-50006.

**Note:**

<sup>1</sup> Examples of safe work procedures, include, but are not limited to:

Communication, hazard identification, monitoring and testing, energy control (lockout), ventilation (purging, flushing, use of local exhaust), inerting, engulfment control, equipment use, equipment maintenance, coordination with another employer, emergency evacuation, rescue, and hazard elimination procedures.

If you have multiple spaces assigned to one attendant, include the procedures necessary to enable the attendant to fulfill their required responsibilities and respond to an emergency. See [WAC 296-809-50010](#), Table 2.

**WAC 296-809-30004 Meet these additional requirements if your employees enter another employer's confined space.**

- (1) You must obtain any available information about permit-required confined space hazards and entry operations from the host employer.
- (2) You must coordinate entry operations with any other employers whose employees will be working in or near the permit-required confined space.
- (3) You must inform the host employer, either through a debriefing or during entry operations, about:
  - (a) The entry program you will follow; and
  - (b) Any hazards you confronted or created in the space during entry operations.

**Note:** This would include any additional permit-required confined spaces identified by you.

**WAC 296-809-400 Employee Training.**

**Your responsibility:** To make sure employees are trained to perform their designated roles safely.

<i><b>You must meet these requirements prior to entry into permit-required confined spaces</b></i>	<i><b>in this section:</b></i>
Provide employee training	<a href="#">WAC 296-809-40002</a>
Certify employee proficiency	<a href="#">WAC 296-809-40004</a>

**WAC 296-809-40002 Provide employee training.**

- (1) You must provide training at no cost to each employee involved in permit-required confined space activities. The training must be in a language and vocabulary they understand, so they acquire the understanding, knowledge and skills necessary to safely<sup>1</sup> perform assigned duties.
  - (a) Establish employee proficiency in their confined space duties<sup>2</sup>.

- (b) Introduce new or revised procedures as necessary.
- (2) You must provide training to each affected employee;
    - (a) Before an employee is first assigned to duties covered by this chapter.
    - (b) Before there is a change in an employee's assigned duties.
    - (c) When there is a permit-required confined space hazard for which the employee has not already been trained.
    - (d) Retrain your employees if there are either:
      - (i) Deviations from your procedures for permit-required confined space entry; or
      - (ii) Employee knowledge or use of your procedures is inadequate.

**Notes:**

<sup>1</sup> Training topics include, but are not limited to:

- Roles and responsibilities;
- Hazards of the permit space;
- Procedures from your program created to protect employees, such as methods used to isolate and control hazards, equipment use, equipment maintenance and evacuation;
- For individuals **not** authorized to perform rescue, the dangers of attempting unauthorized rescue.

<sup>2</sup> Employers can determine employee proficiency by:

- Systematically observing employee performance using safe work procedures and equipment to perform specific job tasks during training exercises that stimulate actual confined space conditions;
- A comprehensive written exam; or
- Any other method that is effective for the employer.

**WAC 296-809-40004 Certify employee proficiency.**

- (1) You must determine and certify employee proficiency in their assigned duties.
- (2) You must make sure the certification:
  - (a) Contains each employee's name, the trainer's written or electronic signature or initials, and the dates of training.
  - (b) Is available for inspection by employees and their authorized representatives.

## **WAC 296-809-500 Permit-entry procedures.**

**Your responsibility:** To establish procedures for the safe permit-required entry of confined spaces.

<b><i>You must meet the requirements...</i></b>	<b><i>in this section:</i></b>
Implement procedures for safe entry into permit-required confined spaces	<a href="#">WAC 296-809-50002</a>
Use an entry permit that contains all required information	<a href="#">WAC 296-809-50004</a>
Keep and review your entry permits	<a href="#">WAC 296-809-50006</a>
Prevent unauthorized entry	<a href="#">WAC 296-809-50008</a>
Provide, maintain and use proper equipment	<a href="#">WAC 296-809-50010</a>
Evaluate and control hazards for safe entry	<a href="#">WAC 296-809-50012</a>
Make sure you have adequate rescue and emergency service available	<a href="#">WAC 296-809-50014</a>
Use nonentry rescue systems or methods whenever possible	<a href="#">WAC 296-809-50016</a>
Make sure entry supervisors perform their responsibilities and duties	<a href="#">WAC 296-809-50018</a>
Provide an attendant outside the permit-required confined space	<a href="#">WAC 296-809-50020</a>
Make sure entrants know the hazardous conditions and their duties	<a href="#">WAC 296-809-50022</a>
Implement procedures for ending entry	<a href="#">WAC 296-809-50024</a>

### **WAC 296-809-50002 Implement procedures for safe entry into permit-required confined spaces.**

- (1) You must identify and evaluate, before employees enter, potential hazards from:  
The permit-required confined space; and  
The work to be performed.
- (2) You must complete an entry permit before entry is authorized, documenting that you have completed the means, procedures and practices necessary for safe entry and work.
- (3) You must make sure that entrants or their representatives have an opportunity to observe any monitoring or testing, or any actions to eliminate or control hazards, performed to complete the permit.
- (4) You must identify the entry supervisor and make sure the entry supervisor signs the entry permit, authorizing entry, before the space is entered.

- (5) You must make the completed permit available to entrants or their authorized representatives at the time of entry so they can confirm the implementation of the preentry preparations. Do this by either posting the completed permit at the entry location, or by any other equally effective means.
- (6) You must make sure the duration of the permit does not exceed the time required to complete the assigned task or job identified on the permit.
- (7) You must note any problems encountered during an entry operation on the permit. Use the information to make appropriate revisions to your program, entry operations, means, systems, procedures and practices.

**WAC 296-809-50004 Use an entry permit that contains all required information.**

You must make sure your entry permit identifies **all** of the following that apply to your entry operation:

- (1) The space to be entered.
- (2) Purpose of the entry.
- (3) Date and the authorized duration of the entry permit.
- (4) Hazards of the space to be entered.
- (5) Acceptable entry conditions.
- (6) Results of initial and periodic tests performed to evaluate and identify the hazards and conditions of the space, accompanied by the names or initials of the testers and by an indication of when the tests were performed.
- (7) Appropriate measures used before entry to isolate the space, and eliminate or control hazards. Examples of appropriate measures include the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit-required confined spaces.
- (8) Names of entrants and current attendants. Other means include the use of rosters or tracking systems as long as the attendant can determine quickly and accurately, for the duration of the permit, which entrants are inside the space.
- (9) The current entry supervisor.
- (10) The signature or initials of the original supervisor authorizing entry.
- (11) Communication procedures for entrants and attendants to maintain contact during the entry.
- (12) Equipment provided for safe entry, such as:
  - (a) Personal protective equipment (PPE).
  - (b) Testing equipment, including equipment capable of detecting an increase in atmospheric hazard levels in the event the ventilation system stops working.
  - (c) Communications equipment.
  - (d) Alarm systems.
  - (e) Rescue equipment.
- (13) Rescue and emergency services available, and how to contact them. Include equipment to use, and names and contact information.
- (14) Other information needed for safety in the particular confined space.

(15) Additional permits issued for work in the space, such as for hot work.

### **WAC 296-809-50006 Keep and review your entry permits.**

- (1) You must review your program and entry operations when measures taken under your permit-required confined space entry program may not protect employees. Review your program as necessary to correct deficiencies before allowing subsequent entries.<sup>1</sup>
- (2) You must keep the canceled entry permits for at least one year to facilitate the review of the permit-required confined space program. Use the canceled entry permits within one year following each entry to review and evaluate both your program and the protection provided to employees entering permit-required confined spaces.<sup>2</sup> Update your written permit-required confined space entry programs as necessary to correct deficiencies before allowing subsequent entries.
- (3) You must keep entry permits or other atmospheric monitoring records that show the actual atmosphere an employee entered or worked in, as employee exposure records.<sup>3</sup>

#### **Notes:**

<sup>1</sup> Examples of circumstances requiring the review of your program include the following:

- There is unauthorized entry of a permit space.
- A permit space hazard not covered by the permit is found.
- A condition prohibited by the permit occurs.
- An injury or near-miss occurs during entry.
- There is a change in the use or configuration of a permit space.
- An employee complains about the effectiveness of the program.

<sup>2</sup> Employers may perform a single annual review covering all entries performed during a twelve-month period. If no entry is performed during a twelve-month period, no review is necessary.

<sup>3</sup> Keep employee exposure records according to chapter [296-802](#) WAC, Employee medical and exposure records.

### **WAC 296-809-50008 Prevent unauthorized entry.**

- (1) You must implement measures necessary to prevent unauthorized entry into permit-required confined spaces, when conducting authorized entry.
- (2) You must protect entrants and those outside the confined space from hazards when removing entrance covers.

**Note:** Examples of measures to prevent unauthorized entry are signs, physical barricades, warning tape, and an attendant.

### **WAC 296-809-50010 Provide, maintain, and use proper equipment.**

- (1) You must provide the equipment in Table 2, when needed and at no cost to employees.
- (2) You must make sure that employees use provided equipment properly.
- (3) You must maintain the provided equipment.

**Table 2 Equipment Provided to Employees at No Cost**

Type of equipment	Used for
Testing and monitoring equipment	Evaluating permit-required confined space conditions
Ventilating equipment	Obtaining and maintaining acceptable entry conditions
Communication equipment	Effective communication between the attendant and the entrants and to initiate rescue when required
Personal protective equipment (PPE)	Protecting employees from hazards of the space or the work performed
Lighting equipment	Employees to see well enough to work safely and to exit the space quickly in an emergency
Barriers or shields, such as pedestrian, vehicle or other barriers	Protecting employees from hazards outside of the space
Ladders	Safe entry and exit by entrants
Rescue and emergency equipment, except for equipment provided by the rescue service provider	Safe and effective rescue
Any other equipment	Safe entry into and rescue from permit-required confined spaces

**Note:** Equipment that is unsuitable for retrieval must not be used including, but not limited to, retrieval lines that have reasonable probability of becoming entangled with the retrieval lines used by other authorized entrants, or retrieval lines that will not work due to the internal configuration of the permit space.

### **WAC 296-809-50012 Evaluate and control hazards for safe entry.**

- (1) You must evaluate and control hazards for safe entry into permit-required confined spaces by doing all the following:
  - (a) Test for atmospheric hazards, in this order:
    - (i) Oxygen
    - (ii) Combustible gases and vapors.
    - (iii) Toxic gases and vapors.
  - (b) Provide each entrant or their authorized representative an opportunity to observe any of the following:
    - (i) Preentry testing.
    - (ii) Subsequent testing.

- (iii) Monitoring of permit-required spaces.
  - (c) Reevaluate the permit-required space in the presence of any entrant, or their authorized representative, who requests this to be done because they have reason to believe that the evaluation of that space may not have been adequate.
  - (b) Upon request, immediately provide each entrant or their authorized representative, with the results of any testing required by this rule.
  - (c) Continuously monitor the atmosphere in areas where entrants are working, when isolation of the space is not feasible. Examples include large spaces or a space that is part of a continuous system, such as a sewer.
- (2) You must evaluate space conditions during entry as follows:

**Table 3 Evaluating Space Conditions**

You must:	In order to:
Test conditions before entry	Determine that acceptable entry conditions exist before entry is authorized by the entry supervisor
Test or evaluate space conditions during entry	Determine that acceptable entry conditions are being maintained during entry operations
Evaluate entry operations	Make sure entrants of more than one employer working at the same time in or around a permit-required confined space, do not endanger each other

**WAC 296-809-50014 Make sure you have adequate rescue and emergency services available.**

- (1) You must make sure you have adequate rescue and emergency services available during your permit-required confined space entry operations.<sup>1</sup>
  - (a) Evaluate and select rescue teams or services who can:
    - (i) Respond to a rescue call in a timely manner.<sup>2</sup> Timeliness is based on the identified hazards. Rescuers must have the capability to reach potential victims within an appropriate time frame based on the identified permit space hazards.
    - (ii) Proficiently rescue employees from a permit-required confined space in your workplace. Rescuers must have the appropriate equipment for the type of rescue.
    - (iii) Agree to notify you immediately in the event that the rescue service becomes unavailable.
  - (b) Make sure that at least one member of the rescue team or service holds a current certification in first aid and cardiopulmonary resuscitation (CPR).
  - (c) Inform each rescue team or service about the hazards they may confront when called to perform rescue.
  - (d) Provide the rescue team or service with access to all permit spaces from which rescue may be necessary. This will allow them to develop appropriate rescue plans and to practice rescue operations.

- (2) You must provide employees assigned to provide permit-required confined space rescue and emergency services, at no cost to the employee, with:
- (a) Personal protective equipment (PPE) needed for safe entry.
  - (b) Other equipment required to conduct rescues safely.
  - (c) Training so they are:
    - (i) Proficient in the use of the PPE and other equipment.
    - (ii) Proficient as an entrant of permit-required confined spaces.
    - (iii) Able to safely perform assigned rescue and emergency duties.
    - (iv) Knowledgeable in basic first aid and cardiopulmonary resuscitation (CPR).
  - (d) Practice sessions for permit-required confined space rescues **at least** once every 12 months where dummies, manikins, or actual persons are removed from either:
    - (i) The actual permit spaces; or
    - (ii) Representative permit spaces that simulate the opening size, configuration, and accessibility, of permit spaces where rescue will be performed.
- (3) You must establish procedures for:
- (a) Contacting rescue and emergency services.
  - (b) Rescuing entrants from permit-required confined spaces.
  - (c) Providing necessary emergency services to rescued entrants.
  - (d) Preventing unauthorized persons from attempting a rescue.

**Notes:**

<sup>1</sup> The following is not considered to be adequate rescue and emergency services.

- Planning to rely on a rescue service and posting a contact number (like “911”) without contacting them and completing an evaluation in advance to ensure they meet the criteria of this standard.

<sup>2</sup> Timely rescue will vary according to the specific hazards involved in each entry. For example, chapter [296-842](#) WAC, Respirators, requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) for work areas considered to contain an IDLH atmosphere.

**Note:** See [Appendix H – Evaluating Rescue Teams or Services](#)

**WAC 296-809-50016 Use nonentry rescue systems or methods whenever possible.**

- (1) You must use nonentry retrieval systems or methods to rescue entrants in a permit-required confined space unless this:
- (a) Would increase the overall risk of injury to entrants; or

- (b) Would not contribute to the rescue of the entrant.
- (2) You must make sure each entrant uses a chest or full-body harness, with a retrieval line attached to the harness at one of the following locations:
  - (a) At the center of the employee's back, near shoulder level.
  - (b) Above the employee's head.
  - (c) At another point which presents a profile small enough for the successful removal of the employee.
- (3) You must attach the retrieval line to a mechanical device or fixed point outside the space, so rescue can begin as soon as necessary.
- (4) You must make sure a mechanical device is available to retrieve entrants from vertical spaces more than 5 feet (1.52 m) deep.

**Note:** When you can demonstrate that the use of a chest or full-body harness is not feasible or creates a greater hazard, then you may use wristlets or another method shown to be the safest and most effective alternative.

**WAC 296-809-50018 Make sure entry supervisors perform their responsibilities and duties.**

You must make sure that an entry supervisor:

- (1) Authorizes the entry into a permit-required confined space by signing the entry permit.
- (2) Oversees entry operations.
- (3) Knows about the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.
- (4) Verifies and checks **all** of the following:
  - (a) The appropriate entries have been made on the permit.
  - (b) All tests specified by the permit have been conducted.
  - (c) All procedures and equipment specified by the permit are in place before approving the permit and allowing entry to the space.
- (5) Terminates the entry and cancels the permit when:
  - (a) The assigned task or job has been completed.
  - (b) A condition in the space that is not covered by the entry permit is discovered.
- (6) Verifies rescue services are available and the means to contact them is operable; and the employer will be notified as soon as the service becomes unavailable.
- (7) Removes unauthorized individuals who enter or attempt to enter the permit-required confined space during entry operations.
- (8) Determines that entry operations remain consistent with the terms of the entry permit and acceptable entry conditions are maintained:
  - (a) Whenever responsibility for a permit-required space entry operation is transferred; and

- (b) At regular intervals dictated by the hazards and operations performed within the space. If the rescue service becomes unavailable during the course of the permit-required confined space entry, you must immediately cancel the entry and permit.

**Notes:**

- Make sure entry supervisors have the required knowledge and proficiency to perform the job duties and responsibilities required by this chapter.
- The entry supervisor may also perform other duties under this chapter, such as attendant or entrant, if they are trained and proficient in those duties.
- The responsibility of the entry supervisor may be passed from one supervisor to another during an entry operation.

**WAC 296-809-50020 Provide an attendant outside the permit-required confined space.****Important:**

1. The number of attendants assigned should be tailored to the requirements of the space and the work performed.
2. You need to assess if it is appropriate or possible to have multiple permit spaces monitored by a single attendant, or have an attendant stationed at a location outside each space. Video cameras and radios are examples of tools that may assist an attendant monitoring more than one space.
3. Attendants may be stationed at any location outside the permit-required confined space if the duties described in this section can be effectively performed for each space that is monitored.

- (1) You must provide at least one attendant who must remain outside the permit-required confined space during entry operations.
- (2) You must make sure each permit-required confined space attendant:
  - (a) Understands the hazards that may be faced during entry, including the mode, signs or symptoms, and results of exposure to the hazards.
  - (b) Is aware of the behavioral effects of exposure to the hazard.
  - (c) Continuously maintains an accurate count of entrants in the space.
  - (d) Maintains an accurate record of who is in the permit-required confined space.
  - (e) Communicates with entrants as necessary to monitor their status or alert them of the need to evacuate the space.
  - (f) Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space.
  - (g) Orders entrants to evacuate the space immediately if **any** of the following conditions occur:
    - (i) A prohibited condition.
    - (ii) The behavioral effects of hazardous exposure in an entrant.

- (iii) A situation outside the space that could endanger entrants.
- (iv) The attendant cannot effectively and safely perform all the duties required in this chapter.
- (h) Takes the following actions when unauthorized persons approach or enter a space:
  - (i) Warn unauthorized persons to stay away from the space.
  - (ii) Tells the unauthorized persons to exit immediately if they have entered the space.
  - (iii) Informs entrants and the entry supervisor if unauthorized persons have entered the space.
  - (iv) Performs nonentry rescues as specified by the rescue procedure.
- (j) Has the means to respond to an emergency affecting one or more of the permit spaces being monitored without preventing performance of the attendant's duties to the other spaces being monitored.
- (k) Carries out no duties that might interfere with their primary duty to monitor and protect the entrants.
- (l) Calls for rescue and other emergency services as soon as entrants may need assistance to escape from the space.
- (m) Monitors entry operations until relieved by another attendant or all entrants are out of the space.

**WAC 296-809-50022 Make sure entrants know the hazardous conditions and their duties.**

You must make sure that all entrants:

- (1) Know the hazards they may face during entry, including the mode, signs or symptoms, and results of exposure to the hazards.
- (2) Use equipment properly.
- (3) Communicate with the attendant as necessary so the attendant can:
  - (a) Monitor entrant status; and
  - (b) Alert entrants of the need to evacuate.
- (4) Alert the attendant whenever either of these situations exist:
  - (a) A warning sign or symptom of exposure to a dangerous situation such as, behavioral changes, euphoria, giddiness potentially from lack of oxygen or exposure to solvents.
  - (b) A prohibited condition.
- (5) Exit from the permit-required confined space as quickly as possible when one of the following occurs:
  - (a) The attendant or entry supervisor gives an order to evacuate.
  - (b) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
  - (c) The entrant detects a prohibited condition.
  - (d) An evacuation alarm is activated.

**WAC 296-809-50024 Implement procedures for ending entry.**

You must make sure you terminate the entry when entry operations are completed, including securing an entrance cover and canceling the permit.

**WAC 296-809-600 Alternative methods.**

**Your responsibility:** To know when you can use alternative methods and documentation.

<b>Important:</b> In addition to this section, you also need to meet the requirements in the following sections of this chapter:
<ol style="list-style-type: none"> <li>1. WAC 296-809-200 Identify and control permit-required confined spaces.</li> <li>2. WAC 296-809-300 Permit-required confined space program.</li> <li>3. WAC 296-809-400 Employee training.</li> </ol>

<b><i>You must meet the requirements...</i></b>	<b><i>in this section:</i></b>
Make sure the following conditions are met if using alternative methods.	<a href="#">WAC 296-809-60002</a>
Implement alternative methods for each permit-required confined space that meet the criteria	<a href="#">WAC 296-809-60004</a>

**WAC 296-809-60002 Make sure the following conditions are met if using alternative methods.**

- (1) You may enter permit-required confined spaces without a permit using alternative methods when you have monitoring and inspection data that supports the following:
  - (a) You have eliminated all the hazards<sup>1</sup>; or
  - (b) You have eliminated all of the physical hazards<sup>1,2</sup>, and continuous forced air ventilation controls the actual or potential hazardous atmosphere. You must also have monitoring data that demonstrates the use of continuous forced air ventilation will maintain the permit-required confined space for safe entry. In the event the ventilation system stops working, entrants can exit the space safely.
- (2) You must have written documentation for the entrants before each entry that includes the following information:
  - (a) The location of the space;
  - (b) Date of entry;
  - (c) Duration of the entry;
  - (d) The hazards of the space and the work;
  - (e) The specific measures used to eliminate the hazards<sup>1</sup>;
  - (f) The ventilation system used to control atmospheric hazards, when applicable, direct reading instruments used to test the atmosphere, and results of the atmospheric testing that demonstrate the absence of a hazardous atmosphere;<sup>1,2</sup>

- (g) All conditions that required evacuation of the space<sup>3</sup>; and
  - (h) The name, title, and signature of the entry supervisor ensuring safe entry procedures.
- (3) You must make sure all documentation produced is available to each affected employee and their authorized representative.
  - (4) You must make sure all monitoring and inspection data is documented and available to each affected employee and their authorized representative.
  - (5) If you must enter prior to the completion of the hazard elimination, you must perform the entry according to WAC 296-809-500 Permit entry procedures. For example – To collect monitoring inspection data or apply hazard elimination measures.

**Notes:**

<sup>1</sup> For the purposes of this section, energy control procedures must isolate the space and result in the elimination of the hazards including applicable stored energy. Evaluate your energy control procedures (lockout) to ensure they fully eliminate the hazards when used. See chapter [296-803](#) WAC, Lockout/tagout (control of hazardous energy). Tagout is an example of a method not considered to eliminate hazards.

<sup>2</sup> Controlling atmospheric hazards through forced air ventilation does not eliminate the hazards.

<sup>3</sup> Do not use alternative methods to enter a continuous system unless you can do the following:

- Completely isolate the area entered from the rest of the space.
- Demonstrate that the conditions that caused the hazard or potential hazard no longer exist within the system for the duration of the entry including engulfment; and
- You have sufficient quantities of continuous ventilation to control the atmospheric hazard.

See [Appendix J for Alternative Methods Documentation](#)

**WAC 296-809-60004 Implement alternative methods for each permit-required confined space that meet the criteria.**

- (1) You must implement your procedures for hazard elimination and alternative methods from your written program.
- (2) Before entry, eliminate any unsafe conditions including removing an entrance cover. When entrance covers are removed, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent any accidental falls through the opening and protect entrants from objects falling into the space.
- (3) For spaces with potential atmospheric hazards you must do all of the following:
  - (a) Test before an employee enters the confined space. Use a calibrated, direct-reading instrument to test the internal atmosphere for all of the following, in this order:
    - (i) Oxygen content.
    - (ii) Flammable gases and vapors.

- 
- (iii) Potential toxic air contaminants.
  - (b) Make sure the atmosphere within the space is not hazardous when entrants are present. Continuously test the atmosphere within the space to ensure hazards do not accumulate.
  - (c) Use continuous forced air ventilation, as follows:
    - (i) Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.
    - (ii) Direct forced air ventilation toward the immediate areas where employees are, or will be working. Continue ventilation until all employees have left the space.
    - (iii) Provide the air supply from a clean source and make sure it does not increase hazards in the space.
  - (4) Provide entrants, or their authorized representatives, with an opportunity to observe the preentry and periodic testing.
  - (5) Evacuate employees from the space immediately when any of the following occurs:
    - (a) Detection of a hazardous atmosphere by air-monitoring instrumentation;
    - (b) Failure of a direct-reading instrument;
    - (c) Any failure of the ventilation; or
    - (d) Introduction of a hazard; a hazard develops; or conditions change within a space.
  - (6) When a space is evacuated, it cannot be reentered as alternative methods unless you do all of the following:
    - (a) Correct conditions that necessitated evacuation.
    - (b) Treat any reentry as a new entry.

**WAC 296-809-099 Definitions.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-099, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-099, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 14-07-086 (Order 13-08), § 296-809-800, filed 03/18/14, effective 05/01/14. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 07-05-062, 07-06-005 (Order 06-38), § 296-809-800, filed 02/20/07, effective 04/01/07. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-800, filed 01/20/04, effective 05/01/04]

**WAC 296-809-100 Scope.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-100, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-100, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-100, filed 01/20/04, effective 05/01/04].

**WAC 296-809-200 Identify and control entry into permit-required confined spaces.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-200, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-200, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-200, filed 01/20/04, effective 05/01/04].

**WAC 296-809-20002 Identify permit-required confined spaces.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-20002, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-20002, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-20002, filed 01/20/04, effective 05/01/04].

**WAC 296-809-20004 Inform employees and control entry to permit required confined spaces.**

Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-20004, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-20004, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-20004, filed 01/20/04, effective 05/01/04].

**WAC 296-809-20006 Follow these requirements when you contract with another employer to enter your confined space.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-20006, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-20006, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-20006, filed 01/20/04, effective 05/01/04].

**WAC 296-809-300 Permit required confined space program.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-300, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-300, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-300, filed 01/20/04, effective 05/01/04].

**WAC 296-809-30002 Develop a written permit-required confined space program.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-30002, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-30002, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-30002, filed 01/20/04, effective 05/01/04].

**WAC 296-809-30004 Meet these additional requirements if your employees enter another employer's confined space.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-30004, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-30004, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-30004, filed 01/20/04, effective 05/01/04].

**WAC 296-809-400 Employee training.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-400, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-400, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-400, filed 01/20/04, effective 05/01/04].

**WAC 296-809-40002 Provide employee training.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-40002, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-40002, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-400, filed 01/20/04, effective 05/01/04].

**WAC 296-809-40004 Certify employee proficiency.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-40004, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-40004, filed

12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-400, filed 01/20/04, effective 05/01/04].

**WAC 296-809-500 Permit entry procedures.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-500, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-500, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-500, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50002 Implement procedures for safe entry into permit-required confined spaces.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50002, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50002, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-400, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50004 Use an entry permit that contains all required information.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50004, filed 01/02/2018, effective 02/05/2018. Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50004, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50004, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50006 Keep and review your entry permits.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50006, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50006, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50006, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50008 Prevent unauthorized entry.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50008, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50008, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50008, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50010 Provide, maintain, and use proper equipment.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50010, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50010, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50010, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50012 Evaluate and control hazards for safe entry.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50012, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50012, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50012, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50014 Make sure you have adequate rescue and emergency services available.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50014, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50014, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 09-05-071 (Order 08-35), § 296-809-50014, filed 02/17/09, effective 04/01/09]. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50014, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50016 Use nonentry rescue systems or methods whenever possible.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50016, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50016, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50018 Make sure entry supervisors perform their responsibilities and duties.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50018, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50018, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50018, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50020 Provide an attendant outside the permit-required confined space.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50020, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50020, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50020, filed 01/20/04, effective 05/01/04].

**WAC 296-809-50022 Make sure entrants know the hazardous conditions and their duties.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-50022, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50022, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50022, filed 01/20/04, effective 05/01/04].

***WAC 296-809-50024 Implement procedures for ending entry.***

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-50024, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-50024, filed 01/20/04, effective 05/01/04].

***WAC 296-809-600 Alternative methods.***

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-600, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-600, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-600, filed 01/20/04, effective 05/01/04].

***WAC 296-809-60002 Make sure the following conditions are met if using alternative methods.***

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-60002, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-60002, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-60002, filed 01/20/04, effective 05/01/04].

***WAC 296-809-60004 Implement alternative methods for each permit-required confined space that meet the criteria.***

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 18-02-071 (Order 16-04), § 296-809-60004, filed 01/02/2018, effective 02/05/2018. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 15-24-102 (Order 14-18), § 296-809-60004, filed 12/01/2015, effective 01/05/2016. Statutory Authority: RCW 49.17.010, .040, .050, and .060. 04-03-081 (Order 02-15), § 296-809-60004, filed 01/20/04, effective 05/01/04].

## Non-Mandatory Appendix A Frequently Asked Questions and Examples of Confined Spaces

Use with chapter 296-809 WAC, Confined Spaces

Confined spaces occur in many industries like agriculture, aerospace, beverages making including fermented beverages (like breweries and wineries); chemicals, construction, food processing and storage, chemical processing, chemical storage, electrical power generation, manufacturing, municipal and public utility systems, gas stations, metals, pulp and paper manufacturing, water and wastewater treatment, transportation, and wood products.

The first step in identifying permit required confined spaces involves evaluating a space to determine, if it meets the definition of a confined space.

### 1. What is a confined space?

A confined space meets all three of the following criteria:

- Large enough and arranged so an employee could fully enter the space and work.
- And has a limited or restricted means of entry or exit,
- Not primarily designed for continuous human occupancy.

**2. Under what circumstances will stairs or ladders constitute a limited or restricted means of egress under the standard?** A space has limited or restricted means of entry or exit, if an entrant's ability to escape in an emergency would be hindered. Ladders, and temporary, movable, spiral, or articulated stairs will usually be considered a limited or restricted means of egress. Fixed industrial stairs that meet WISHA standards will be considered a limited or restricted means of egress when the conditions or physical characteristics of the space, in light of the hazards present would interfere with the entrant's ability to exit or be rescued in a hazardous situation.

**3. Does the fact that a space has a door mean that the space does not have limited or restricted means of entry or exit and, therefore, is not a "confined space"?** A space has limited or restricted means of entry or exit, if an entrant's ability to escape in an emergency would be hindered. The dimensions of a door and its location are factors in determining whether an entrant can easily escape; however, the presence of a door does not in and of itself mean that the space is not a confined space. For example, a space such as a bag house or crawl space that has a door leading into it, but also has pipes, conduits, ducts, or equipment or materials that an employee would be required to crawl over or under or squeeze around in order to escape, has limited or restricted means of exit. A piece of equipment with an access door, such as a conveyor feed, a drying oven, or a paint spray enclosure, will also be considered to have restricted means of entry or exit if an employee has to crawl to gain access to his or her intended work location. Similarly, an access door or portal which is too small to allow an employee to walk upright and unimpeded through it will be considered to restrict an employee's ability to escape.

**4. How will DOSH assess a space which is entirely open on one plane, such as a pit, in determining whether a space has limited or restricted means for entry or exit?** In determining whether a space has limited or restricted means for entry or exit, DOSH will evaluate its overall characteristics to determine if an entrant's ability to escape in an emergency would be hindered. Thus, a pit, shaft or tank that is entirely open on one plane can be considered a confined space if the means for entering the space (stairway, ladderway, etc.) are narrow or twisted, or otherwise configured in such a way as to hinder

an entrant's ability to quickly escape. Similarly, the pit, shaft, or tank itself may be confining because of the presence of pipes, ducts, baffles, equipment or other factors that would hinder an entrant's ability to escape.

5. **Are the hazards posed by a confined space to be considered in determining whether a space meets the definition of a confined space?** The determination whether a space has “limited or restricted means for entry or exit” within the meaning of the standard’s definition of “confined space” should include consideration of whether, in light of the hazards posed by the particular space at issue, the configuration or other characteristics of the space would interfere with an entrant’s ability to escape or be rescued in an emergency situation.
  
6. **Can a space that is initially designed for continuous human occupancy become a “confined space” because of changes in its use?** If the changes alter the character of the space or if new or more serious hazards are introduced, those changes require reevaluation of whether the space is fit for continuous employee occupancy. If the space is not fit for continuous employee occupancy and the other criteria of the confined space definition are met, the space would be reclassified as a confined space.

Confined spaces have many shapes, sizes, and uses. For example: tanks for storing or processing liquids, pressure vessels, sewer systems, septic tanks, underground utility vaults and chambers, open topped tanks, vats, secondary chemical containment, trenches, storage bins, silos and hoppers.

**Other specific examples include, but are not limited to:**

- Adhesive mixers
- Adhesive tanks
- Aggregate bins
- Air pollution equipment including Air Scrubbers
- Aircraft wing fuel tanks
- Anaerobic Digesters
- Attics
- Autoclaves
- Bag houses+
- Balers
- Bins like grain bins
- Blast furnaces
- Blast recovery pits
- Bleach tanks
- Boilers
  
- Bridge box girders and enclosed beams
- Caustic Soda Tanks
- Caissons
- Cesspools and pits
- Chimneys and stacks
- Coal Bunkers
- Cooling towers

- Chillers
- Clay Hopper
- Composters
- Compactors
- Controlled Atmosphere (CA) Rooms (sealed)
- Concrete Mixers
- Construction related:
  - Caissons
  - Crawl spaces and attics
  - Excavation and Trenches –
    - Associated confined spaces including manholes, piping, pits, sewers,
    - See also Chapter [296-155](#) WAC
  - Pits
  - manhole units
  - Precast concrete units
  - Sewers – see water treatment systems
  - Vaults
  - Tanks
- Conveyor Enclosures
- Crane legs
- Crawl spaces
- Crude Oil Tank Cars/Trucks
- Crushers
- Cyclones
- Degreaser
- Digesters
- Dip tanks
- Dropped ceilings
- Dikes and diked areas
- Duct Work
- Dust collectors (including wood dust)
- Drums
- Drying ovens
- Fermenters
- Food and beverage processing and storage including: breweries, wineries, milk processing, eggs (including rotten eggs), fruit, corn syrup, water, chocolate, oil and grease, and vegetables.
  - Batch Cookers
  - Bins
  - Containers
  - Controlled atmosphere rooms (CA rooms)
  - Continuous cookers
  - Conveyor Enclosures
  - Drying ovens
  - Grease pits and tanks
  - Kettles

- Mixers
- Ovens
- Heated lard tanks
- Heated liquid sugar bins
- Hoppers
- Hydrogenators
- Pits
- Silos for flour and grains
- Tanks
- See also Waste Water
- Vessels
- Furnaces
- Heating and cooling ventilation ductwork
- Hoppers
- Hydrapulpers
- Hydrogen Reformer Furnace
- Ice “houses”
- Incinerators
- Irrigation dam outlet towers
- Irrigation siphons
- Kilns
- Manholes sewers, storm drains, communication and other utility
  - Precast concrete and other preformed manhole structures
- Mixers and mix tanks
- Mills
- Mobile
  - Bark blowers
  - Concrete mixers
  - Garbage trucks
  - Rail tanks
  - Tanker trucks including: gas, oil, milk
  - Vacuum truck tanks
- Ovens
- Pressure vessels (including boilers)
- Precipitators
- Process and storage containers, kettles, pits, tanks and vessels:
  - See also Food processing
  - Chemical storage tanks and processing vessels like: Bio diesel, degreasing tanks, gasoline, acids, bases, solvents, scrubbers (Air pollution), water treatment
  - Electroplating and pickling tanks
  - Furnaces
  - Water and waste water
- Pits including:
  - Elevator pits
  - Grease
  - Manure pits
  - Slag

- Steam
  - Swimming pool surge pits
  - Utility
  - Valve
- Pipes and Pipelines
- Rail tank cars
- Reaction and reactor vessels
- Recycle and transfers station
  - Balers
  - Compactors
- Reservoirs
- Water and water treatment systems including:
  - Bar screen enclosures
  - Drains
  - Digesters
  - Grease traps
  - Irrigation siphons
  - Lift and pumping stations
  - Manholes
  - Manure pits
  - Pits
  - Sanitary, storm sewer and waste water systems
  - Septic tanks
  - Tanks
  - Utility vaults
  - Water tanks and reservoirs
  - Wet wells
  - Valve pits
- Silos and hoppers including:
  - Animal feed
  - Ash collection
  - Chip
  - Chemicals
  - Cement
  - Grain
  - Sawdust
  - Slag
  - Silage (corn, hay, beet)
  - Soaking
- Shafts
- Shredders
- Scrubbers
- Sludge pits
- Sulfuric acid Tanks
- Tanks and Vats (including portable)
  - Adhesive

- Bleach
- Chemical
- Food processing
- Fuel
- Mobile
- Sewer and septic tanks
- Solvent and solvent recovery
- Water and waste water
- Tanker Vessels
- Tunnels
- Vaults including utility: dust, electrical, transformers, water, sewer, steam, valves
- Water towers
- Wind machines:
  - Blades
  - Nacelle

*Note: This list is not all inclusive of all confined spaces in industry. It is intended to provide the user with variety of examples for illustration.*

For additional information, see the OSHA website [OSHA.gov](http://www.osha-slc.gov) for the Compliance Directive [CPL 2.100 Application of the Permit-Required Confined Spaces \(PRCS\) Standard, 29CFR 1910.146](#) and OSHA Confined Spaces Advisor <http://webapps.dol.gov/elaws/confined.htm>.

## Non-Mandatory Appendix B Frequently Asked Questions and Examples of Permit Required Confined Space Hazards

### Frequently asked Questions

#### 1. What is a permit-required confined space?

A permit-required confined space or permit space means a confined space that has one or more of the following characteristics capable of causing death or serious physical harm:

- (a) Contains or has the potential to contain a hazardous atmosphere;
- (b) Contains a material that has the potential for engulfing someone who enters;
- (c) Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section; or
- (d) Contains any physical hazard. This includes any other recognized serious health or safety hazard including engulfment in a solid or liquid material, electrical shock, or moving parts.
- (e) Contains any other recognized serious safety or health hazard that could either:
  - (i) Impair the ability to self-rescue; or
  - (ii) Result in a situation that presents an immediate danger to life or health.

The Confined Space rule WAC Chapter 296-809 has an on-going requirement to identifying, evaluate confined spaces for permit required confined space hazards. Based upon actual and potential hazards associated with the actual confined space itself. Keep in mind, many spaces and work processes may have unique hazards and hazards may come from many sources including:

- Process chemicals and residues or equipment associated with the confined space like flammable solvent or energized systems.
- Developing hazards like hydrogen sulfide gas in a sewer line or oxygen deficient atmosphere developing during a welding process.
- Work processes brought into a space like:
  - Welding,
  - Painting,
  - Inerting a flammable atmosphere
- Hazards from exterior of the space that could affect the entry like:
  - A poorly located air intake on a ventilation system that captures vehicle exhaust containing carbon monoxide and transports the carbon monoxide containing exhaust to the confined space.
  - Or physical hazards like large chunks of airborne concrete debris from a concrete demolition job affecting the ability of the permit required confined space attendant to maintain a safe entry

Prior to entry into permit required confined spaces, the standard requires a comprehensive hazard assessment that includes potential and actual hazards from the confined space itself and the work performed including the equipment in use. Hazards may vary depending upon the actual space, and may change over time.

### Common Examples Permit-Required Confined Space Hazards

*It is not comprehensive and is not intended as a checklist.*

#### **Hazardous Atmospheres**

- **Oxygen Deficiency** - Processes that consume or displace oxygen:
  - Activated charcoal
  - Rusting metal
  - Fermentation
  - Welding
  - Fires
  - Decaying organic material (and methane production)
  - Inert gases: argon (Ar<sub>2</sub>), carbon dioxide (CO<sub>2</sub>) including dry ice and chemical reactions producing carbon dioxide (CO<sub>2</sub>), helium (He<sub>2</sub>), nitrogen (N<sub>2</sub>). Some inert gases are used to control a potential flammable atmosphere. The inerting of the space with one of these gases will create an oxygen deficient atmosphere.
- **Oxygen Enrichment** - Note: Enriched oxygen concentrations will increase the flammability of many materials including clothing. Sources of oxygen enrichment include:
  - Failure to inadequately blank or disconnect oxygen lines
  - Leaking oxygen hoses or pipes
  - Use of oxygen instead of air for ventilation purposes
- **Combustible, flammable, and explosive atmospheres (Gases, vapors or mists).** Note: Many chemicals that create these atmospheres are also toxic at much lower concentrations.
  - Acetylene
  - Acetone
  - Butane
  - Combustible dusts
  - Hydrogen gas
  - Gasoline
  - Solvents – toluene, xylene, mineral spirits, methanol, ethanol
  - Methane, propane, natural gas, hydrogen sulfide
  - Petroleum products
  - Chemical reactions that result in the formation of flammable or explosive atmospheres like sulfuric acid contacting metal and forming hydrogen gas.
- **Toxic Atmospheres**
  - Air Contaminants WAC [296-841](https://www.lni.wa.gov/safety-health/safety-rules/chapter-pdfs/WAC296-841.pdf) <https://www.lni.wa.gov/safety-health/safety-rules/chapter-pdfs/WAC296-841.pdf> and Immediately Dangerous to Life or Health (IDLH) <http://www.cdc.gov/niosh/idlh/default.html>

- Ammonia
- Arsene
- Carbon Monoxide (CO)
- Burning or combusting fuels (incomplete combustion) for example:
  - Gas heaters, stoves, and grills
  - Portable generators
  - Propane powered industrial trucks (forklifts)
  - Internal combustible engines: vehicles, heavy equipment
- Iron processing
- Welding
- Poorly ventilated mines
- Cyanide
- Chlorine gas (Cl<sub>2</sub>)
- Chlorine dioxide (ClO<sub>2</sub>)
- Hydrogen Sulfide (H<sub>2</sub>S)
- Oxides of nitrogen (NOX)
- Carbon monoxide (CO)
- Cleaning and degreasing chemicals
  - Hydrogen peroxide
  - Solvents
  - Halogenated degreasing agents like methylene chloride
- Chemical reactions that result in the formation of toxic materials
- Process chemical residues

**Engulfment Hazards** – Surrounding, suffocating, drowning, bridging materials

- Water
- Corn syrup
- Chocolate
- Wine
- Beer
- Plastic
- Sewage
- Grain
- Sawdust

**Internal configuration** - sloping walls or floor tapering to a smaller cross section trapping or asphyxiating a worker

- Silos
- Hoppers

**Physical Hazards**

- Crushed by (gravity and stored energy)
  - Falling objects, coke, scale, concrete, baled materials, tools and equipment)
  - Energy

- Chemical reactions generating heat or reactive material (explosions, unstable or reactive materials).
- Electrical
- Flowable energy like steam, gas
- Hydraulic
- Pneumatic
- Radiation (Ionizing or non-ionizing)
- Steam
- Stored energy
  - Systems under pressure
  - Gravity
- Heat and temperature extremes
  - Combustible dust and particulates. For additional information on combustible dust see:
    - [https://lni.wa.gov/safety-health/safety-topics/search-by-topic?index=Safety\\_Topics&query=combustibleDusts](https://lni.wa.gov/safety-health/safety-topics/search-by-topic?index=Safety_Topics&query=combustibleDusts)
    - [Enforcement and Consultation Guidance for Combustible Dust Hazards \(DD 12.85\)](#)
  - Organic dust
    - Grain
    - Walnut shells
    - Plastic
    - Sugar
  - Metal dusts
- Pressurized lines
  - Chemical
  - Hydraulic
  - Pneumatic
  - Steam
  - Water
- Mechanical hazards may also have associated electrical hazards
- Moving or rotating parts
  - Augers, agitators, tumblers, mixers, rakes
  - Crushers
  - Conveyors
- Falls from heights
- Ignition sources
  - Non-intrinsically safe equipment
    - An exposed light bulbs in a flammable atmosphere
    - Switches ventilation system motors

- Spark producing equipment and processes like welding, cutting, burning, torching, grinding, space heaters
  - Static discharge
  - Transferring liquids without bonding or grounding

**Water**

- Water sufficient quantity either to endanger the life of the entrant (like drowning) or to interfere with escape from the space
- Water combined with other hazardous conditions such as concealing trip and fall hazards from abandoned machine pads or floor holes and openings
- Water may also promote hazardous atmosphere formation like fermentation or rotting vegetation

**Biological hazards**

- Disease causing organisms
- Poisonous spiders and snakes

**Non-Mandatory Appendix C Rules in Other Chapters that Cover Confined Spaces**

**General Safety and Health Standards, Chapter [296-24](#) WAC**

- WAC 296-24-69507, Confined Spaces
- WAC 296-24-70007, Work in Confined Spaces
- WAC 296-24-71507, Work In Confined Spaces
- WAC 296-24-71509 through -71519, Ventilation in Confined Spaces
- WAC 296-24-960(10), Working on or near Exposed Energized Parts

**Safety Standards for Telecommunication, Chapter [296-32](#) WAC**

**Safety Standards for Electrical Workers, Chapter [296-45](#) WAC**

**Safety Standards for Longshore and Stevedore, Chapter [296-56](#) WAC**

- WAC 296-56-60053, Hazardous Atmospheres and Substances
- WAC 296-56-60235(2), Welding, Cutting (hot work)
- WAC 296-56-60235(6), Welding, Cutting (hot work)

**Pulp, Paper, and Paperboard Mills and Converters, Chapter [296-79](#) WAC**

- WAC 296-79-230, Vessel or Confined Area Requirements

**Safety Standards for Grain Handling Facilities, Chapter [296-99](#) WAC**

- WAC 296-99-040 What practices must an employer follow for entry into grain storage structures

**Safety Standards for Construction Work, Chapter [296-155](#) WAC**

- WAC 296-155- 203 and 20307, Confined Spaces
- WAC 296-155-280 (1)(b) and 280(5)(d)(ii), Temporary Heating Devices
- WAC 296-155-410(7), Welding and Cutting Fire Prevention
- WAC 296-155-415(2), Ventilation and Protection in Welding, Cutting, and Heating
- WAC 296-155-415(3), Ventilation and Protection in Welding, Cutting, and Heating
- WAC 296-155-655, General Protection Requirements
- WAC 296-155-657, Requirements for Protective Systems
- WAC 296-155 part Q, Underground Construction

**Safety Standards for Shipyards, Ship Breaking and Repair, Chapter [296-304](#) WAC**

**Safety Standards for Fire Fighters, Chapter [296-305](#) WAC**

**Reserved.**

**Non-Mandatory Appendix E Permit Required Confined Space Entry Program Information and Template**

Use with the Confined Spaces book, Chapter 296-809 WAC

This appendix is provided for your information, and to help you determine the information needed for your program. To develop an effective program for your facility or work environment, you will need to identify work conditions and hazards typical to your industry, unique to your workplace and confined spaces. You also need to consider other rules. For a list of rules in other chapters that cover confined spaces, see the Appendix C.

This appendix includes a fill-in-the-blank form. You are responsible for developing, implementing, and maintaining your written program and entry procedures.

**FILL-IN-THE-BLANK TEMPLATE**

**The following is a fill-in-the-blank template for a confined space entry program. You are responsible for:**

- Providing the actual content; and
- Implementing and maintaining your written program.

Complete this document by adding your specific information to meet the requirements of WAC 296-809-30002, Develop a written permit-required confined space program.

*(Insert company name)*\_\_\_\_\_

**CONFINED SPACE ENTRY PROGRAM OVERVIEW**

This confined space entry program:

- Identifies all permit-required confined spaces in our workplace; and
- Describes our procedures for worker safety and health in permit-required confined spaces

Employees will participate in developing and implementing the program in the following ways:

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*(Insert company name)*\_\_\_\_\_ will treat all confined spaces as permit-required spaces until hazards have been eliminated and the spaces meet alternative methods requirements. All entries will require either a permit or alternative methods documentation.

**ROLES & RESPONSIBILITIES**

The following table allows you to name the employees responsible for the tasks outlined:

*For information only*

Remove this box from your completed program after you complete Table 1

In addition to the roles below, you need want to designate:

- A Confined Space Program Administrator - Someone with overall responsibilities for your program.

**Table 1 Confined Space Program Assignment and Responsibilities**

Responsibility:	Person assigned this responsibility:
Evaluate our work locations and determine: <ul style="list-style-type: none"> <li>• Determine confined space(s) exist at the worksite.</li> <li>• Identify Permit-required confined space(s) at the worksite.</li> </ul> <i>For example: Name of the Competent Person or Entry Supervisor</i>	
Record information in the confined space catalog. See Table 2 for more information.	
Evaluate hazards and determine the appropriate entry Procedure(s) for the space. <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Classify all confined spaces as permit required until you meet all the requirements of the 600 section Alternative methods.</li> <li>• Alternative methods Only apply after the elimination of the physical hazards, and monitoring data of the space demonstrates only hazard remaining in the space is a potential hazardous atmosphere controlled by the use of forced air ventilation. Atmospheric monitoring required.</li> </ul>	
Create employee training program that results in the necessary knowledge, skills and abilities for all the active participants to implement your confined space entry program including training on your program, entry procedures.	
Determine employee proficiency in knowledge, skills and abilities.	
Implement the corresponding confined space entry procedures.	

Responsibility:	Person assigned this responsibility:
Re-evaluate the space when the use, configuration, or hazards of a confined space change.	
Monitoring and testing as follows: <ul style="list-style-type: none"> <li>• Conduct initial monitoring to identify and evaluate any potentially hazardous atmospheres.</li> </ul>	
Inform exposed or potentially-exposed employees of the existence and hazards of confined spaces using the methods described below under “Control Confined Space Entry.”  Post permit required warning signs	
Provide employees entering confined spaces, or their designated representative, an opportunity to observe pre-entry testing and any subsequent testing.	
<ul style="list-style-type: none"> <li>- All test results will be provided to the entrants or their representatives upon request.</li> <li>- The space will be re-evaluated if entrants or their representatives believe that the permit space was inadequately tested.</li> </ul>	
Make sure that all equipment needed for safe entry into any confined space is available and in proper working order.	
Confined Space Program Administrator Conduct a review using the canceled entry permits to identify	

**IDENTIFY CONFINED SPACES AND HAZARDS**

The following table provides a list of our confined spaces and hazards:

*For information only*

Remove this box from your completed program

Using the table below insert your list of confined spaces and their hazards here. Keep in mind permit required confined space hazards come from a variety of source, and may change over time like with different work processes - welding vs painting or inspecting. Or you can attach this information as an appendix instead.

**Table 2 Catalog of Confined Spaces and Hazards**

Confined Space (name or number)	Type of Space (tank, hopper, sump, pit etc.) plus configuration (length x width x depth or height)	Access ( hatch, ladder, crawling, through a pipe chase etc.)  Access dimensions	Location	Hazards include Potential and Actual including hazards from the process	Entry procedures Available Y/N
<i>(Insert your confined space information)</i>					

**CONTROL OF CONFINED SPACE ENTRY**

We use the following method(s) to inform employees about the existence and hazards of confined spaces, and prevent unauthorized entry:

- (Check appropriate box(es))
- Posting danger signs at each permit space reading “Danger-Confined Space - Do Not Enter”

*(Insert additional means you will use to prevent entry)*

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*For information only*

Remove this box from your completed program

- Using barriers that completely seal the permit required confined space
- Specialized tools under management’s control to open the space
- Supplementing these measures with training and signs

**PERMIT ENTRY PROCEDURES**

Our entry procedures for permit spaces include the following:

*Either insert your safe work practices and procedures here. OR provide references to the actual location of the procedures you expect your employees to use.*

*For information only*

Remove this box from your completed program

You will likely have multiple entry procedures for each space. Specific examples of some of the procedures you may use to enter and complete work include the following:

- Procedure 001 Energy Control Lockout (LOTO) program and procedures
- Procedure 002 Atmospheric monitoring including instrument calibration, functional testing (calibration or “bump” check)
- Procedure 003 Job Hazard Analysis (Hazard identification)
- Procedure 004 Hazard identification
- Procedure 005 Ventilation
- Procedure 006 Inerting Process
- Procedure 007 Equipment related procedures like testing, calibration, maintenance use for all the equipment
- Procedure 008 Rescue Procedure(s) non-entry and entry rescue
- Procedure 009 Closing a permit required confined space(s) and canceling the permit
- Procedure 010 Coordinating with an outside employer
- Procedure 011 Communication procedures including emergency communications
- Procedure 012 Specific hazard elimination procedures

Other examples of procedures include: using barriers and signs, monitoring or testing the air , energy control (lockout), ventilation (purging, flushing, use of local exhaust), inerting, engulfment control, equipment use, equipment maintenance, equipment inspections, specialized equipment and tools, evacuation, coordination with another employer, rescue, procedures to cancel the permit and close the permit required confined space, and hazard elimination procedures to prepare for alternative methods like alternate entry. If you have multiple spaces assigned to one attendant, include the means and procedures necessary to enable the attendant to respond to an emergency affecting one or more of those permit-required spaces without distraction from responsibilities as required by WAC 296-809-50020.

See WAC 296-809-30002 Develop a written permit required confined space program for additional information.

**ALTERNATE METHODS and HAZARD ELIMINATION PROCEDURES**

*For information only*

Remove this box from your completed program

Complete this section only when using alternative methods.

Our hazard elimination procedures for permit spaces include the following:

*Either insert your safe work practices and procedures here. OR provide references to the actual location of the procedures you expect your employees to use.*

Our permit spaces that have had all hazards eliminated or all physical hazards and the only hazard that remains an actual or potential hazardous atmosphere may use alternative methods. While using alternative methods require the use of documentation to communicate the required

information to the entrant. See WAC 296-809-600 Alternative methods for additional information.

Alternate method procedures may be used for the spaces listed in the following table when the hazard elimination procedures located (*insert location here*) have been implemented prior to entry, and we have completed the required documentation for the entrant.

Confined Space Name or Number	Hazards	Method of Hazard Elimination	Potential Hazardous Atmosphere	Ventilation Equipment Required
<i>(insert your specific information)</i>	<i>(insert your specific information)</i>	<i>(insert your specific procedure)</i>	<i>(insert specific information)</i>	<i>(insert your specific information)</i>

We will do all of the following when using alternate methods procedures:

- Eliminate unsafe conditions and hazards by implementing our alternative methods procedures.
  - Including removing entrance covers safely, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space; using hazard elimination procedures.
  - Certify that pre-entry measures and implementing hazard elimination procedures on the documentation required for entry.
  - Make the pre-entry certification available to each entrant before entry.
- Before an employee enters the confined space, check the calibration date on the instrument to ensure that calibration is within the manufacture’s specification; complete a calibration check or functional test with a known traceable gas test mixture; record the results in the log, ensure you have the correct gas sensors in the instrument for the hazardous atmospheric testing. Follow the confined space sampling procedure (*insert number or location here*). Allow the instrument sufficient time to respond at each sampling location. Record the results of the atmospheric tests on the documentation. Test the internal atmosphere with a calibrated, direct-reading instrument for all of the following, in this order:
  1. Oxygen content
  2. Flammable gases and vapors
  3. Potential toxic air contaminants.
- Provide entrants, or their authorized representatives, with an opportunity to observe the pre-entry and periodic testing.

- Make sure the atmosphere within the space is not hazardous when entrants are present.
- Use continuous forced air ventilation, as follows:
  - Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.
  - Direct forced air ventilation toward the immediate areas where employees are, or will be, and continue ventilation until all employees have left the space.
  - Provide the air supply from a clean source and make sure it does not increase hazards in the space.
- Test the atmosphere within the space as needed to make sure hazards do not accumulate.
- If a hazardous atmosphere is detected during entry, we will do all of the following:
  - Evacuate employees from the space immediately.
  - Evaluate the space to determine how the hazardous atmosphere developed.
  - Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
  - Verify the space is safe for entry before continuing the entry operation.
- The written documentation is available to each employee entering the space or to that employee’s representative at the confined space bulletin board.

**Alternative Methods Documentation Form**

Location of the Space		
<b>Entry Date:</b>	<b>Entry Duration</b>	
<b>List of Entrants</b>		
<b>List of Physical Hazards in the space</b>	<b>List of (Potential or Actual) Atmospheric Hazards in the space</b>	
<b>List each action taken to eliminate physical and atmospheric hazards in the space</b>		
<b>Action</b>	<b>Description</b>	
<b>Ventilation</b>		
Is forced air ventilation required?	Yes	No

If “Yes” specify type of ventilation like local exhaust? Are multiple units required?			Amount of ventilation (cfm or AC/hr.)			
<b>Air Monitoring</b>						
<b>Substance Monitored</b>		<b>Unit</b>	<b>Permissible Levels</b>		<b>Monitoring Results</b>	
					<b>Initial Test</b>	<b>Peak Reading during entry</b>
<b>Instruments used for Air Monitoring</b>						
Model number or type			Calibration date:	Calibration Check Date		
Additional notes about the space and entry (including whether evacuation was necessary)						
<b>Person Responsible for Ensuring the Space is Safe to Enter</b>						
<b>Name:</b>			<b>Job Title:</b>			
<b>Signature:</b>						

**TRAINING**

- We will provide permit space training to employees at the following times:
  - When hired, so new employees are aware of our confined spaces
  - Before they are assigned permit space entry duties
  - When their assigned duties change; and
  - When there is a change in a space that creates hazards for which they have not been trained
  - Retraining for employees when you have any reason to believe they are not proficient at their confined pace duties including procedural changes or not following existing procedures.

*For information only*

Remove this box from your completed program

**Following are 6 basic categories of training, based on duties and potential exposure:**

1. Awareness training provided to all employees potentially exposed to permit spaces, covering the following:
  - a. The location and hazard of each space
  - b. The company program for confined spaces
  - c. Emphasis on **not** entering the space for any reason
2. Identification of permit required confined spaces:
  - a. Competent person
  - b. Entry supervisors
3. Program administrator.
4. Entry and exit training for the following team members:
  - a. Entrants
  - b. Attendants
  - c. Entry Supervisors
  - d. Rescue team members
  - e. Competent Person
  - f. Confined Space Program Administrator
5. Training on how to manage confined space entries for entry supervisors.
6. Rescue – rescue procedures, equipment, inspections, set up, and use:
  - a. Non-entry rescue including - attendants
  - b. Entry rescue team members
7. Pre-entry program and procedure training for all:
  - a. entrants
  - b. supervisors
  - c. Attendants
  - d. Rescue team members
8. Training on evaluating and testing confined spaces for:
  - a. Entry supervisors
  - b. Staff assigned to test and evaluate the space
9. Retraining for employees when you have any reason to believe they are not proficient at their confined space duties.

**OUR RESPONSIBILITIES FOR CONTRACTORS**

*For information only*

Remove this box from your completed program

Complete this section **only** when you hire a contractor to work in your confined space(s)

- A copy of this Confined Space Entry Program will be provided to each contractor involved in permit space entry work at our company. Each contractor will be briefed on the following:
- The location of the permit spaces at our *insert location here*
- Entry into permit spaces is only allowed by following the written entry program.
- The reasons for listing the space as a permit space, including both of the following:
  - The identified hazards
  - Our experience with the particular space.
- Precautions we have implemented to protect employees working in or near the space.
- Who will debrief the contractor at the completion of entry operations, or during entry if needed, on whether any hazards were confronted or created during their work.

**OUR RESPONSIBILITIES WITH HOST EMPLOYERS**

*For information only*

Remove this box from your completed program

Complete this section **only** when you are a contractor working in someone else’s confined space.

- Our entry supervisor will do the following to make sure entry operations are coordinated with host employers:
- Obtain any information on the hazards of the permit space and information from previous entry operations
- Determine if other workers will be working in or near the space.
- Coordinate entry operations with other workers
- Inform the host employer of the permit space program that we follow.
- Hold a debriefing conference at the completion of the entry operation, or during the entry operation if needed, to inform the host employer of any hazards confronted or created during work in the space.

**RESCUE AND EMERGENCY SERVICES**

We have developed the following rescue and emergency action plan:

*For information only*

Remove this box from your completed program

Insert your specific company rescue and emergency plan(s) here.

1. For more information about rescue from confined spaces, see the Helpful Tool-  
*Evaluating Rescue Teams or Services*

*For information only*

Remove this box from your completed program

2. You need to use non-entry rescue procedures and equipment, unless this would increase the risk of injury to the entrant or would be ineffective.
3. For entry rescue, see Entry Rescue Plans in this section.
4. This section is **not** required for the following confined space entries:
  - Classified and documented nonpermit spaces.
  - Proper use of alternative methods.

**ENTRY RESCUE PLANS**

**Permit Spaces Requiring Stand-by Rescue Services**

*Note: You must complete the evaluation of the rescue and emergency service and have an agreement in place.*

Permit space:	Stand-by rescue service name and telephone number:

**PERMIT-REQUIRED CONFINED SPACE PROGRAM REVIEW**

*For information only*

Remove this box from your completed program

This section is not required if you only entering and use alternative methods.

At least every 12 months we will conduct a review using canceled entry permits to identify any deficiencies in our program. We will conduct a review immediately if there is reason to believe that the program does not adequately protect our employees, such as the following situations:

- Unauthorized entry of a permit space
- Discovery of a hazard not covered by the permit
- Detection of a condition prohibited by the permit
- An injury or near-miss during entry
- Change in the use or configuration of the space; or
- Employee complaints of permit space program ineffectiveness.

Corrective measures will be documented by revising the program. Employees will participate in revising the program, and will be trained on any changes.

If no permit space entry operations are conducted during the year, no review is needed.

**Non-Mandatory Appendix F Sample Confined Space Entry Permits**

Use with Chapter 296-809 WAC, Confined Spaces

The following 3 fill-in-the-blank confined space entry permits can be modified to fit your particular entry. Make sure you use the appropriate portions of the forms to create your own entry permit.

To design your own entry permit, see WAC 296-809-50004. Use an entry permit that contains all the required information.

**CONFINED SPACE ENTRY PERMIT Sample 1**

Date:					
Site location or description:					
Purpose of entry					
<hr/> <hr/>					
Supervisor(s) in charge of crews:		Type of crew (welding, plumbing,		Phone #:	
Permit duration:					
Communication procedures (including equipment):					
Rescue procedures (also see emergency contact phone numbers at end of form):					
<b>REQUIREMENTS COMPLETED (PUT N/A IF ITEM DOESN'T APPLY)</b>		<b>DATE</b>	<b>TIME</b>	<b>REQUIREMENTS COMPLETED (PUT N/A IF ITEM DOESN'T APPLY)</b>	
Lockout/De-energize/Try-out				Supplied Air Respirator (N/A if alternate entry)	
Line(s) Broken-Capped- <del>Blank</del>				Respirator(s) (Air Purifying)	
Purge-Flush and Vent				Protective Clothing	
Ventilation				Full Body Harness w/ "D" ring	
Secure Area (Post and Flag)				Emergency Escape Retrieval Equip	
Lighting (Explosive Proof)				Lifelines	

Hotwork Permit			Standby safety personnel (N/A if alternate entry)		
Fire Extinguishers			Resuscitator—Inhalator (N/A if alternate entry)		
<b>Add other specific information, if needed, or attach additional instructions or requirements. See the following examples in bold print.</b>					
<b>Line(s) to be bled/blanked:</b>					
<b>Ventilation equipment:</b>					
<b>PPE clothing:</b>					
<b>Respirator(s):</b>					
<b>Fire extinguisher(s):</b>					
<b>Emergency retrieval equipment:</b>					

**AIR MONITORING**

Substance Monitored		Permissible Levels		Monitoring Results						
Time monitored (put time)	Percent Oxygen	<i>Record the time 19.5% to 23.5%</i>								
LEL/LFL		Under 10%								
Toxic 1:		___ PEL	___ STEL							
Toxic 2:		___ PEL	___ STEL							
Toxic 3:		___ PEL	___ STEL							
Toxic 4:		___ PEL	___ STEL							

**REMARKS:**

Air Tester Name	ID#	Instrument(s) Used (For example: oxygen meter, combustible gas indicator, etc.)	Model # or Type	Serial# or Unit
ATTENDANTS AND ENTRANTS				
Attendant(s) (Required for all confined space work except alternate entry)	ID #	Confined Space Entrant(s)	ID#	

**REMARKS:**

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**SUPERVISOR AUTHORIZATION – ALL CONDITIONS SATISFIED**

Department or telephone numbers:

Emergency contact telephone numbers:

Ambulance:

Fire:

Safety:

Rescue team:

<b>CONFINED SPACE ENTRY PERMIT Sample 2</b>			
Date and time issued:			
Job site/space I.D.			
Equipment to be worked on:			
Standby personnel:			
Date and time expires:			
Job supervisor:			
Work to be performed:			
<ul style="list-style-type: none"> <li>• Atmospheric checks:</li> <li style="padding-left: 20px;">Oxygen _____%</li> <li style="padding-left: 20px;">Explosives _____% L.F.M.</li> <li style="padding-left: 20px;">Toxic _____PPM</li> </ul>	<p style="text-align: center;">Time:</p>		
<ul style="list-style-type: none"> <li>• Testers signature: _____</li> </ul>			
<ul style="list-style-type: none"> <li>• Source isolation (No Entry)</li> </ul>	N/A	Yes	No
<ul style="list-style-type: none"> <li>Pumps or lines blinded, disconnected, or blocked</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Ventilation modification</li> </ul>	N/A	Yes	No
<ul style="list-style-type: none"> <li>Mechanical</li> <li>Natural ventilation only</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Atmospheric check after isolation and ventilation:</li> </ul>			
<ul style="list-style-type: none"> <li>Oxygen: _____% &gt;19.5%</li> <li>Explosive: _____%L.F.M. &lt;10%</li> <li>Toxic: _____PPM &lt;10PPM H<sub>2</sub>S</li> <li>Time: _____</li> <li>Tester's signature: _____</li> </ul>			

**Appendix F**

<ul style="list-style-type: none"> <li>• Communication procedures:</li> </ul>			
<ul style="list-style-type: none"> <li>• Rescue procedures</li> </ul>			
<ul style="list-style-type: none"> <li>• Entry standby and backup persons successfully completed required training?</li> </ul>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
<ul style="list-style-type: none"> <li>Is it current?</li> </ul>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
<ul style="list-style-type: none"> <li>• Equipment:</li> </ul>	N/A	Yes	No
Direct reading gas monitor tested:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety harness and lifelines for entry and standby persons:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hoisting equipment:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Powered communications:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCBA's for entry and standby persons:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protective clothing:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All electric equipment listed: Class I, Division I, Group D and non-sparking tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>• Periodic atmospheric tests:</li> </ul>			
Oxygen _____% Time_____	Oxygen _____% Time_____		
Oxygen _____% Time_____	Oxygen _____% Time_____	Explosive	
% Time_____ Explosive _____% Time_____	Explosive _____% Time_____	Explosive _____% Time_____	
Explosive _____% Time_____	Toxic _____% Time_____	Toxic	
% Time_____ Toxic _____% Time_____	Toxic _____% Time_____	Toxic _____% Time_____	
<p>We have review the work authorized by this permit and the information contained here. Written instruction and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "No" column. This permit not valid unless all appropriate items are completed.</p>			
<p>Permit prepared by: _____</p> <p style="text-align: center;">Entry Supervisor</p>			

Approved by:	_____			
	Unit Supervisor			
Reviewed by:	_____			
	Operations Manager			
<b>This permit is to be kept at the job site. Return this job site copy to the unit supervisor following job completion.</b>				
Entrants Name	Sign in	Sign out	Sign in	Sign out

**CONFINED SPACE ENTRY PERMIT Sample 3**

<b>PERMIT VALID FOR 8 HOURS ONLY. ALL PERMIT COPIES MUST REMAIN AT THE SITE UNTIL THE JOB IS COMPLETED</b>		
Date:	Site location/description:	
Purpose of entry:		
Supervisor (s) in charge of crews:	Type of crew:	Telephone #:
Communication procedures:		
Rescue procedures (Telephone # at bottom):		
<b>BOLD INDICATES MINIMUM REQUIREMENTS TO COMPLETE AND REVIEW PRIOR TO ENTRY</b>		

Note: For items that do not apply, enter N/A in the blank					
REQUIREMENTS COMPLETED	DATE	TIME	REQUIREMENTS COMPLETED	DATE	TIME
Lockout/De-energized Tagout			Full body harness w/"D" Ring		
Line(s) Broken-Capped-Blank			Emergency Escape Retrieval Equipment		
Purge-Flush and Vent			Lifelines		
Ventilation			Fire Extinguishers		
Secure Area (Post and Flag)			Lighting (Explosive Proof)		
Breathing apparatus			Protective Clothing		
Resuscitator-Inhalator			Respirator(s) (Air-Purifying)		
Standby safety personnel			Burning and Welding Permit		
<b>Continuous Monitoring</b>			<b>Yes</b>	<b>No</b>	
			<input type="checkbox"/>	<input type="checkbox"/>	
<b>Periodic Monitoring Frequency:</b> _____					
<b>Test(s)</b>			<b>Permissible entry level</b>		
Percent of oxygen			19.5% To 23.5%		
Lower flammable limit			Under 10%		
Carbon Monoxide			+ 35 PPM		
Aromatic Hydrocarbon			+ 1 PPM * 5 PPM		
Hydrogen Cyanide			(Skin) * 4 PPM		
Hydrogen Sulfide			+ 10 PPM * 15 PPM		
Sulphur Dioxide			+ 2PPM * 5 PPM		
Ammonia			* 35 PPM		
<p>* Short-term exposure limit: Employees can work in the area up to 15 minutes                      + 8-hour Time Weighted Average: Employees can work in the area 8 hours (longer with appropriate respiratory protection).</p>					
<b>REMARKS:</b>					
_____					
_____					
_____					
GAS TESTER NAME AND CHECK # _____					
INSTRUCTIONS USED: _____					

MODEL AND/OR TYPE: \_\_\_\_\_

SERIAL AND/OR UNIT #: \_\_\_\_\_

**SAFETY STANDBY IS REQUIRED FOR ALL CONFINED SPACE WORK**

SAFETY STANDBY PERSONS

CHECK#

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CONFINED SPACE ENTRANTS

CHECK#

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SUPERVISOR AUTHORIZATION – ALL CONDITIONS SATISFIED:**

Department or telephone number: \_\_\_\_\_

**EMERGENCY CONTACT TELEPHONE NUMBERS:**

Ambulance: \_\_\_\_\_

Fire: \_\_\_\_\_

Safety: \_\_\_\_\_

Gas  
Coordinator: \_\_\_\_\_

## Non-Mandatory Appendix G Sewer Entry Information

Use with Chapter 296-809 WAC, Confined Spaces

This appendix provides additional information on sewer system entries. These entries differ from other permit required confined space entries in the following ways:

- Usually, the space cannot be isolated from a continuous system.
- The atmosphere may suddenly become lethally hazardous. For example: toxic, flammable, or explosive atmospheres may enter the work area from another portion of the system.
- Unlike other types of work where permit require confined space entry is rare, a sewer worker's usual work environment is a permit-required confined space.

### Entrants

Your designated entrants should be employees who:

- Are thoroughly trained in your sewer entry procedures; and
- Can demonstrate that they follow entry procedures when entering sewers

### Monitoring the Atmosphere

Consider the unique circumstances of your sewer system when preparing for entry, including the unpredictability of the atmosphere. Choose monitoring or testing equipment based upon knowledge, experience and a critical evaluation of the available instrumentation. best types.

- Train and equip entrants with atmospheric testing equipment capable of identifying at least the following:
  - Oxygen concentrations of less than 19.5%
  - Flammable gas or vapor of 10% or more of the lower flammable limit (LFL) including methane.
  - Hydrogen sulfide of 10 parts per million (ppm) or more
  - Carbon monoxide of 35 ppm or more
- The selected testing instruments should be carried and used by the entrants to:
  - Continuously monitor the atmosphere; and
  - Warn the entrants of any potential atmospheric hazards, in the direction of travel.
- If several entrants are working together in the same immediate location, you will need to decide how many test instruments are required.
- Calibrate and use atmospheric testing equipment according to the manufacturer's instructions.
- Oxygen or broad range tests (like testing for the lower explosive limit [LEL]) are best suited when actual or potential contaminants **have not yet** been identified.
  - Unlike substance-specific tests, these enable overall reading of the hydrocarbons (flammables) present in the space.
  - They do not measure the levels of specific substance contamination.

- Substance-specific tests, which measure levels of specific substances, are important when actual and potential contaminants **have** been identified. They:
  - Are vitally important when deciding on appropriate entry conditions and proper protection for entrants (for example, with ventilation and personal protective equipment)
  - May not detect other potentially lethal atmospheric hazards when the sewer environment suddenly and unpredictably changes.

### **Protecting Against Surge Flow and Flooding**

To the extent possible, sewer crews should develop and maintain a relationship with the local weather bureau and fire and emergency services. In this way, sewer work may be delayed, or interrupted and entrants withdrawn, whenever the following occur:

- Sewer lines are suddenly flooded by rain or fire suppression activities
- Flammable or other hazardous materials are released into sewers due to industrial emergencies or transportation accidents.

### **Special equipment for sewer entry**

You may need to use special equipment when entering sewers. This equipment could include the following:

- Self-contained breathing apparatus (SCBA) for escape purposes
- Waterproof flashlights (intrinsically safe)
- Boats, rafts, and personal flotation devices (PFDs)
- Radios
- Rope stand-offs for pulling around bends and corners

## Non-Mandatory Appendix H Evaluating Rescue Teams or Services

Use with the Confined Spaces book, Chapter 296-809 WAC

This appendix will help you do the following for permit-required confined spaces in your workplace:

- Evaluate the type of rescue services you need; and
- Determine how well rescue services perform

Select and use either on-site rescue teams or off-site rescue services that will minimize the potential for harm to both entrants and rescuers.

For any rescue team or service, your evaluation should consist of the following two elements:

1. An **initial evaluation** where you decide whether a rescue team or service is adequately trained and equipped to perform the kind of rescues needed at your workplace in a timely manner.
2. A **performance evaluation** on the performance of the prospective or existing rescue team or service during an actual or practice rescue.

For example:

During your initial evaluation you determined that an on-site rescue team would be more expensive but not more effective than an off-site rescue service. As a result, you hire an off-site rescue service.

After observing the off-site rescue service perform a practice rescue, you decide their training or preparedness is not adequate. You decide to select another rescue service or to form an on-site rescue team.

### Initial Evaluation

The following information can help you determine the rescue service needs for your workplace.

For an off-site rescue service you need to, at a minimum, contact the service to plan and coordinate the evaluations required.

The following are examples that **do not** meet the requirements of WAC 296-809-50014,

*Make sure you have adequate rescue and emergency services available:*

- Posting a rescue service's number without contacting them
- Planning to rely on 911 emergency services without checking to see if they are able to provide them.

### *Note:*

Whether a rescue service meets your workplace needs depends on all of the following:

- The confined spaces from which a rescue may be necessary
- The hazards likely to be encountered in those spaces.
- The number of entrants needing rescue.

Table 1 can help you determine whether a rescue service meets your permit-required confined space rescue needs. Use the column labeled “Results” to answer the questions in the “Task” column.

**Table 1**  
**Initial Evaluation Worksheet**  
**If you answer no to any of these questions, you will need to consider an alternative.)**

Tasks	Results
<p>1. Determine the rescue response time needs for your permit-required confined spaces.</p> <ul style="list-style-type: none"> <li>• Examples:           <ul style="list-style-type: none"> <li>• If entering an atmosphere that is potentially or immediately dangerous to life or health (IDLH), the rescue team or service needs to be standing by at the permit-required confined space, ready to enter.</li> <li>• If the danger to entrants is restricted to mechanical hazards that can cause injuries such as broken bones or abrasions, a longer response time of 10 or 15 minutes might be acceptable.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• _____minutes</li> </ul>
<p>2. Consider the amount of time required for the rescue service to:</p> <ul style="list-style-type: none"> <li>• Receive notification</li> <li>• Arrive at the scene</li> </ul> <p>To find out how quickly the rescue team or service is able to get from its location to our permit-required confined spaces, you need to consider:</p> <ul style="list-style-type: none"> <li>– The location of the rescue team or service relative to our workplace.</li> <li>– The quality of roads and highways, bottlenecks, or traffic congestion that might be encountered in transit</li> <li>– The reliability of the rescuer’s vehicle</li> <li>– The training and skill of the rescuer’s drivers</li> </ul> <ul style="list-style-type: none"> <li>• Set up and be ready for entry</li> </ul>	<ul style="list-style-type: none"> <li>• Receive notification</li> <li>• + _____ minutes</li> </ul> <p>Arrive at the scene</p> <ul style="list-style-type: none"> <li>• + _____ minutes</li> </ul> <p>Comments:</p>   <ul style="list-style-type: none"> <li>• Set up and be ready for entry</li> <li>• + _____ minutes</li> <li>• = _____ minutes</li> </ul> <p>Does this amount of time meet your needs from Task 1?            Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>3. Determine the availability of the rescue service by considering:</p> <p>a. Is the rescue serviced available at all times of the day when you will be entering permit-required confined spaces?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>

Tasks	Results
b. Are key members of the rescue service available at these times?	Yes <input type="checkbox"/> No <input type="checkbox"/>
c. If the rescue services become unavailable while an entry is underway, can they notify you so you can instruct the attendant to abort the entry immediately?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Determine if the rescue service meets all of the requirements in the Performance Evaluation Worksheet found in Table H-2.	If you answered “ <b>yes</b> ” above, how soon can the plan be implemented?  If you answered “ <b>no</b> ” and this cannot be resolved, then you need to consider an alternative.
Determine if a local emergency service (911) is willing to perform rescues at your workplace  If you call 911, is a trained and equipped responder available?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Will the emergency service (like 911) responder be willing to perform rescue?	Technical Rescue <input type="checkbox"/> First Aid Only <input type="checkbox"/>  If you answered “ <b>first aid only,</b> ” then an alternative is required.
Have you made sure the emergency services (911) responders can perform rescues in your spaces?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Determine if there is an adequate communication method between the attendant and the prospective rescuer:  Can a request for rescue be transmitted without delay:	Yes <input type="checkbox"/> No <input type="checkbox"/>

**Performance Evaluation**

WAC 296-809-50014, *Make sure you have adequate rescue and emergency services*, requires rescue practice at least once every 12 months if the team or service has not successfully performed a rescue within that time. This practice exercise provides you with an opportunity to evaluate the rescue service under conditions similar to your permit-required confined spaces.

First, as part of any practice session, the rescue service or another qualified party should perform a critique of the practice rescue, so that deficiencies can be corrected in:

- Procedures
- Equipment
- Training
- Number of people

Then, you should review the results of the critique and any corrections made for deficiencies identified by a “no” answer in Table HT-2. This will help you determine whether the service could be quickly upgraded to meet your needs.

Table HT-2 will help you determine:

- If the rescue service meets all of the performance requirements in WAC 296-809-50014, *Make sure you have adequate rescue and emergency services; and*
- What changes may be necessary.

Use the right column labeled “Results” to answer the questions in the “Task” column.

**Table 2**  
**Performance Evaluation Worksheet**  
 (If you answer **no** to any of these questions, you will need to take corrective action)

Task	Result
Have all team members been trained as entrants, including the potential hazards of all permit-required confined spaces, or of representative spaces, from which rescue may be needed?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Can team members recognize the signs, symptoms, and consequences of exposure to any hazardous atmospheres that may be present in those permit-required confined spaces?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Is every team member:  Provided with and properly trained in the use of any PPE that may be needed to perform rescues in the facility, such as air-line respirators or fall arrest equipment?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Properly trained to perform functions during rescues, and to use any rescue equipment, such as ropes and backboards, needed in a rescue attempt?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Are team members trained in the first-aid and medical skills needed to treat victims injured or overcome by the types of hazards that may be encountered in the permit spaces at the facility?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do all team members perform their duties safely and efficiently?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do the team members focus on their own safety before considering the safety of the victim?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If necessary, can the rescue service properly test the atmosphere to identify acceptable entry conditions?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Can the rescue team members identify the information that applies to the rescue from:  Entry permits	Yes <input type="checkbox"/> No <input type="checkbox"/>

Task	Result
Hot work permits	Yes <input type="checkbox"/> No <input type="checkbox"/>
Safety Data Sheets (SDSs)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Has the rescue service been informed of any hazards that may arise from outside the permit-required confined space, such as those caused by future work near the space?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If necessary, can the rescue service properly rescue injured employees from a permit space that has any of the following: A limited size opening (less than 24 inches (60.9 cm) in diameter)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Limited internal space?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Internal obstacles or hazards?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If necessary, can the rescue service safely perform an elevated (high angle) rescue?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Determine if the rescue service has a plan for each type of rescue operation at your workplace. Does the rescue service have a plan for each of the kinds of permit space rescue operations at your workplace?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Is the plan adequate for all types of rescue operations that may be needed at your workplace?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Rescue practice may occur in representative confined spaces or in the most restrictive spaces. When planning a practice include any of the following features that exist in your permit-required confined spaces: <b>Space Access</b> <b>Horizontal</b> -- The entrance is located on the side of the permit space. Use of retrieval lines could be difficult.	Is this type of rescue a possible situation at your workplace? Yes <input type="checkbox"/> No <input type="checkbox"/>

Task	Result
<p><b>Vertical</b> -- The entrance is located:                      On the top of the permit-required confined space so that rescuers must climb down; or                      The bottom of the permit space so that rescuers must climb up, to enter the space.                      Rescuers may need special knowledge to safely retrieve an injured entrant.</p>	<p>Is this type of rescue a possible situation at your workplace?                      Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p>
<p><b><u>Entrance Size</u></b>  <b>Restricted</b> – An entrance with a smallest dimension of 24 inches or less. Entrances of this size are too small for a rescuer to enter the space while using a self-contained breathing apparatus, or allow normal spinal immobilization of an injured employee.</p>	<p>Is this type of rescue a possible situation at your workplace?                      Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached</p>
<p><b>Unrestricted</b> – An entrance with a smallest dimension greater than 24 inches. These entrances allow relatively free movement into and out of the permit space.</p>	<p>Is this type of rescue a possible situation at your workplace?                      Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p>
<p><b><u>Internal configuration</u></b>  <b>Open</b> -- no obstacles, barriers, or obstructions within the space. For example, a water tank.</p>	<p>Is this type of rescue a possible situation at your workplace?                      Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p>
<p><b>Obstructed</b> -- The space contains some type of obstacle, requiring a rescuer to maneuver around it. For example, a baffle or mixing blade. Large equipment such as a ladder or scaffold brought into a space for work purposes is considered an obstacle if the positioning or size makes rescue more difficult.</p>	<p>Is this type of rescue a possible situation at your workplace?                      Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p>

## Appendix H

Task	Result
<p><b>Elevated</b> -- A space where the entrance is above grade by 4 feet or more. This type of space usually requires knowledge of high angle rescue procedures because it is difficult to package and transport an injured employee to the ground from the entrance.</p>	<p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p>
<p><b>Non-elevated</b> -- A space with the entrance located less than 4 feet above grade. The rescue team can transport an injured employee normally.</p>	<p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p>

## Non-Mandatory Appendix I Atmospheric Testing or Monitoring in Confined Space

Use with Chapter 296-809 WAC, Confined Spaces

Chapter 296-809 WAC, Confined Spaces requires testing the atmospheric of a confined space for two purposes. One to evaluate the potential and actual hazards of a confined space. Two to verify acceptable conditions exist for entry and continued work in a confined space.

### 1. Hazard Evaluation or Pre-entry testing

- Collect and analyze data on the potential atmosphere of your space. Use equipment with sufficient sensitivity and specificity for any hazardous atmosphere that may arise. Ensure you use equipment designed to detect the potential atmospheric hazards of your process and at the levels that may be present.
- This will enable you to:
  - Develop appropriate entry procedures; and
  - Maintain acceptable entry conditions to ensure the atmospheric conditions are safe for a worker to enter and complete work.

### 2. Verification monitoring

Air monitoring does not end with the pre-entry testing. Hazardous atmospheres may evolve and change rapidly in a confined space. You must continue to verify that acceptable entry conditions exist for the duration of the entry. Test for all potential hazardous atmospheres or contaminants.

- Verify that acceptable entry conditions exist by doing the following:
  - Use the equipment specified on your permit, collect the sample at each location for time specified by the manufacturer. Determine whether contaminants are within the range of acceptable entry conditions. See the Air Contaminant Chapter [296-841](#) WAC.

### Using testing and monitoring equipment

- Air monitors instruments and gas detectors have variety of features and can detect many gases. Select air testing and monitoring equipment based upon the potential and actual atmospheric hazards of the space and work processes. See manufactures information regarding actual instrument capabilities like: sensors, data logging, docking stations, extensions, hoses, and probes.
- Ensure you use equipment designed to detect the potential atmospheric hazards of your process(es) and at the levels that may be present. Use equipment that has sufficient sensitivity and specificity to detect and measure the potential hazardous atmospheres related to the space and work processes of the space you will enter.
- Prior to using any instrument for testing, ensure you have trained the worker conducting the monitoring and testing.
- Use only a calibrated and functionally tested (bump test) instrument. The functional test will confirm the instrument's response to a known concentration of test gas. It will

confirm functionality of alarms and sensors per the manufacturer’s manual. Consult the manufacture’s operations manual for information regarding type/mixture of gas needed. Do not use expired calibration gas.

- Overtime, all sensors will degrade and no longer function to accurately evaluate atmospheric conditions. Do not use an instrument outside its calibration date or one that fails the functional test. Recalibrate the instrument and sensors, if dropped or damaged. See your manufacture’s operations manual for further information about performing maintenance.
- For each test required on the permit, you must allow sufficient time for the instrument to draw air into the equipment and the sensor (or other detection device) to react to the chemical. This is considered the “minimum response time”. See your manufacture’s manual for the minimum response time for your instrument. If you have attached a hose or probe extension to the instrument inlet, you will need to wait additional time to allow the air to move through the hose or probe extension into the instrument inlet.
- Stratified atmospheres (layered) will need additional sampling points to characterize the atmosphere. For example: Test the atmospheric envelope at a distance of approximately 4 feet (1.22 m) in the direction of travel, and to each side. Allow sufficient time at each the sampling location for the instrument to collect an air sample into the equipment and for the sensor to complete the analysis before moving to the next sampling location. If using a sampling probe, adapt the entrant's rate of progress to the sampling speed and detector response.
- Test the atmosphere in the following order:
  - **Oxygen.** Most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen-deficient atmosphere.
  - **Flammable or combustible gases.** They present an immediate threat to life, through inhalation, fire, or explosion.
  - **Toxic gases**

Note: Many multi-gas monitors will now measure five to six gases simultaneously with several toxic sensors. It is common for a multiple-sensor gas monitor to evaluate oxygen, combustible gases, hydrogen sulfide and carbon monoxide. The standard requires monitoring for oxygen and combustible gas levels. Toxic gas hazards can vary with significantly with different types of confined spaces and work processes. Do not assume that the toxic gases are limited to only hydrogen sulfide and carbon monoxide. Evaluating other gases may require different or additional toxic sensors.

Calibration is defined by OSHA Bulletin SHIB 05-04-2004 an instrument’s measuring accuracy relative to a known concentration of gas. Gas detectors measure the concentration of a gas in an air sample by comparing the sensor’s response to the response generated by a calibration gas of a known concentration. The instrument’s response to the calibration gas serves as the measurement scale or reference point.” As a result of this sensor response, the Bulletin

emphasizes the need to calibrate the instrument in the same environmental conditions as the monitor will be used in to help ensure accurate gas concentration readings.

**Record the Results and Evaluate the Data**

- For all monitoring and testing results, record test results in the appropriate space on the entry permit.
- Have a technically qualified individual perform evaluate or at least review, the data. Identify all serious atmospheric hazard. Develop appropriate entry procedures.

<p>Note:</p> <p>Examples of technically qualified individuals include:</p> <ul style="list-style-type: none"><li>– Qualified industrial hygienists like Certified Industrial Hygienist (CIH)</li><li>– Qualified safety professional</li><li>– Certified marine chemist</li></ul>
---

Duration of testing: Allow sufficient time at each the sampling location for the instrument to collect an air sample into the equipment and for the sensor to complete the analysis. This is particularly important, if using a sampling probe, adapt the entrant's rate of progress to the sampling speed and detector response. See the instrument manufacture's operations manual of for additional information.

**Non-Mandatory Appendix J  
Alternative Methods Documentation Form**

Use with Chapter 296-809 WAC, Confined Spaces

<b>Location of the Space</b>			
<b>Entry Date:</b>	<b>Entry Duration</b>		
<b>List of Entrants</b>			
<b>List of Physical Hazards in the space</b>	<b>List of (Potential or Actual) Atmospheric Hazards in the space</b>		
<b>List each action taken to eliminate physical and atmospheric hazards in the space</b>			
<b>Action</b>	<b>Description</b>		
<b>Ventilation</b>			
Is forced air ventilation required?	Yes	No	
If "Yes" specify type of ventilation like local exhaust? Are multiple units required?	Amount of ventilation (cfm or AC/hr)		
<b>Air Monitoring</b>			
<b>Substance Monitored</b>	<b>Unit</b>	<b>Permissible Levels</b>	<b>Monitoring Results</b>

				<b>Initial Test</b>	<b>Peak Reading during entry</b>
<b>Instruments used for Air Monitoring</b>					
<b>Model number or type</b>			<b>Calibration date:</b>	<b>Calibration Check Date</b>	
Additional Notes about the space and entry (including whether evacuation was necessary)					
<b>Person Responsible for Ensuring the Space is Safe to Enter</b>					
<b>Name:</b>			<b>Job Title:</b>		
<b>Signature:</b>					

## Non-Mandatory Appendix K The permit-space program and the entry permit

If your employees will enter a confined space that has one or more of the hazards shown in the chart to the right, the space is a permit space and you must prepare a written permit-space program before they enter. Entry occurs when any part of a worker's body enters the space opening.

- An entry permit is required if atmospheric and physical hazards cannot be controlled or eliminated.
- You can use alternate entry procedures to enter a permit space if all physical hazards can be eliminated and all atmospheric hazards can be eliminated or controlled with continuous ventilation.

You determined that you have a confined space.



