



# **SONOMA STATE UNIVERSITY**

## **Confined Space Entry Program**

Department of Environmental Health & Safety  
November 2021 Version 0

**TABLE OF CONTENTS**

**1.0 INTRODUCTION..... 1-1**

**2.0 SCOPE..... 2-1**

    2.1 Minimum Requirements ..... 2-1

    2.2 Application ..... 2-1

**3.0 DEFINITIONS..... 3-1**

**4.0 WORK EVALUATION..... 4-1**

    4.1 Determination ..... 4-1

    4.2 Classifications..... 4-1

    4.3 Department Confined Space Inventory ..... 4-3

    4.4 Department of Environmental Health and Safety ..... 4-3

    4.5 Departments ..... 4-3

**5.0 ENTRY PROCEDURES FOR PERMIT REQUIRED CONFINED SPACES AND OTHER CONFINED SPACES ..... 5-1**

    5.1 General Requirements..... 5-1

    5.2 Responsibilities:..... 5-2

    5.3 Entry Supervisor Duties: ..... 5-2

**6.0 RESCUE SERVICES ..... 6-1**

    6.1 General Requirements..... 6-1

    6.2 Non-Entry Rescue ..... 6-1

    6.3 Entry Rescue ..... 6-2

**7.0 ENTRY CONDITIONS..... 7-1**

    7.1 Acceptable Entry Conditions ..... 7-1

    7.2 Conditions Prohibiting Entry – Applies to all Spaces ..... 7-1

**8.0 NON-PERMIT CONFINED SPACE ENTRY PROCEDURES ..... 8-1**

    8.1 General Requirements:..... 8-1

    8.2 Reclassification of a Permit-Required Confined Space: ..... 8-2

**9.0 RESTRICTED ACCESS AREAS ..... 9-1**

    9.1 General Requirements ..... 9-1

**10.0 TRAINING..... 10-1**

**11.0 CONTRACTOR ENTRY INTO CONFINED SPACES..... 11-1**

    11.1 Contractor Confined Space Entry..... 11-1

    11.2 Joint Department and Contractors Entry into Confined Spaces ..... 11-1

**12.0 PROGRAM EVALUATION ..... 12-1**

    12.1 General Requirements..... 12-1

    12.2 Responsibilities..... 12-1

    12.3 Revisions ..... 12-1

**13.0 ATTACHMENTS ..... 13-1**

    A. Sonoma State University Confined Space Inventory ..... 13-1

    B. Classification Worksheets (Pending and Completed)..... 13-1

    C. Confined Space Determination Form ..... 13-1

    D. Entry Permit..... 13-1

    E. Entry Permit Tracking Log ..... 13-1

    F. Ventilation Guidelines ..... 13-1

    G. Classification Worksheet (Form) ..... 13-1

**RECORD OF REVISIONS**

Version	By	Date	Description of Revision
0	RL	Nov 2021	New written program and attachments to replace existing program.

Legend:

RL: Ruth LeBlanc, Dir. Environmental Health & Safety

## **1.0 INTRODUCTION**

---

The hazards associated with confined space entry are numerous, which include, but are not limited to, flammable, toxic, and/or oxygen deficient atmospheres; and the potential for entrapment and engulfment. This program details the requirements that must be strictly followed to ensure the safety of Sonoma State University, (SSU) personnel who work in and around confined spaces.

## 2.0 SCOPE

---

### 2.1 Minimum Requirements

This Program specifies the minimum requirements to be followed by employees assigned to enter confined spaces that are regulated by the California Division of Occupational Safety and Health (Cal/OSHA). This program, therefore, complies with the content of the following Title 8, California Code of Regulations (8 CCR, Article 108):

- Section 5156. Scope, Application, and Definitions.
- Section 5157. Permit-Required Confined Spaces.
- Section 5158. Other Confined Space Operations<sup>1</sup>

### 2.2 Application

- The Department of Environmental Health and Safety in cooperation with all affected departments, managers, supervisors, and/or employees shall be responsible for implementing the SSU Confined Space Entry Program.
- All University personnel shall be responsible for complying with the content of this program and procedures.
- All University personnel shall implement the procedures in the Program as outlined in Section(s) 4.0 through 8.1, as well as, fulfill the requirements for training as outlined in Section 9.0. All portions of this Program shall be applicable to all employees working in confined spaces.

---

<sup>1</sup> Other confined space operations include construction operations regulated by 8 CCR 1502; agriculture operations (including cotton gins) defined in 8 CCR 3437; marine terminal operations defined in 8 CCR 3460; telecommunication vaults and unvented vaults regulated by 8 CCR 8616; grain handling facilities regulated by 8 CCR 5178; natural gas utility operation within distribution and transmission facility vaults defined in Title 49 Code of Federal Regulations Parts 191, 192 and 193; or electrical utility operations within underground vaults as defined in 8 CCR 2700.

### 3.0 DEFINITIONS

---

Acceptable Entry Conditions: The conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

Air Sampling/Monitoring: Measuring and evaluating the amount of a substance present in the atmosphere to which a worker may be exposed. Samples may be taken continuously or at intervals in the breathing zone of the worker. Continuous air monitoring, however, is considered the best management practice.

Alternate Entry Procedure: A procedure that may be used to enter a Permit-Required Confined Space if the only hazard present in the space is atmospheric and is controllable by mechanical ventilation alone, and the atmosphere will not become immediately dangerous to life and health if the mechanical ventilation fails.

Asphyxiant: A substance that causes oxygen deprivation through atmosphere displacement or hemoglobin interaction (i.e. simple or chemical asphyxiation, respectively).

Atmosphere: Refers to the gases, vapors, mists, fumes, and dusts within and around a confined space.

Attendant: An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized Entrant: An employee who is authorized by the employer to enter a permit space.

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

Ceiling Level: The airborne concentration of a toxic agent that must be exceeded.

Combustible Dust: A dust capable of undergoing combustion or of burning when subjected to a source of ignition.

Confined Space (5157 General Industry): A space having all of the following characteristics:

- a. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- b. Has limited or restricted means for entry or exit; and
- c. Is not designed for continuous employee occupancy.

Confined Space (5158 Other Confined Spaces): A space defined by the concurrent existence of the following conditions:

- a. Existing ventilation is insufficient to remove dangerous air contamination, oxygen enrichment and/or oxygen deficiency which may exist or develop; and
- b. Ready access or egress for the removal of a suddenly disabled employee is difficult due to the location and/or size of the opening(s).

Contaminant: Any unwanted substance (e.g. dust, fume, mist, vapor, or gas) in the atmosphere or on surfaces that can be harmful to humans.

Corrosive: Any substance that can cause destruction of living tissue or inanimate surfaces by chemical action.

Dangerous Air Contamination (5158 Other Confined Spaces): An atmosphere presenting a threat of causing death, injury, acute illness, or disablement due to the presence of flammable and/or explosive, toxic, or otherwise injurious or incapacitating substances.

- a. Dangerous air contamination due to the flammability of a gas or vapor is defined as an atmosphere containing the gas or vapor at a concentration greater than 20 percent<sup>2</sup> of its lower explosive (lower flammable) limit.
- b. Dangerous air contamination due to a combustible particulate is defined as a concentration greater than 20 percent of the minimum explosive concentration of the particulate. Note: This concentration may be approximated as a condition in which any dust obscures vision at a distance of 10 feet.
- c. Dangerous air contamination due to the toxicity of a substance is defined as the atmospheric concentration immediately hazardous to life or health. Note: This definition of dangerous air contamination due to the toxicity of a substance does not preclude the requirement to control harmful exposures, under the provisions of Article 107, to toxic substances at concentrations less than those immediately hazardous to life or health.

Double Block and Bleed: The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

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

Engulfment: The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated 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.

Entry: The action by which a person passes through an opening into a permit-required confined space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit (permit): The written or printed document that is provided by the employer to allow and control entry into a permit space and that contains specified information.

Entry Supervisor: The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required. 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 section for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Ground Fault Circuit Interrupter (GFCI): A fast-acting circuit breaker that is sensitive to very low levels of current leakage to ground. The interrupter is designed to limit the electric shock to a current and time duration value below that which can produce serious injury.

Hazardous Atmosphere (5157 General Industry): An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- a. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- b. Airborne combustible dust at a concentration that meets or exceeds its minimum explosive concentration (MEC); Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 10-feet or less.
- c. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- d. Atmospheric concentration of any substance (including radioisotopes) for which a published permissible exposure limit has been exceeded;
- e. Any other atmospheric condition that is immediately dangerous to life or health.

Hot Work: Work activities, including but not limited to, open flame, the use or operation of equipment or tools potentially capable of creating a spark, elevated temperature, or electrical energy source sufficient to be a potential source of ignition. (Refer to the SSU Hot Work Program)

Hot Work Permit: The employer's written authorization to perform operations utilizing an open flame or operations capable of providing any source of ignition.

Immediately Dangerous to Life or Health (IDLH): Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Inerting: The displacement of the atmosphere in a permit space by a noncombustible gas to such an extent that the resulting atmosphere is noncombustible.

Irritant: Is any substance that will induce a local inflammatory reaction on immediate, prolonged, or repeated contact with living tissue.



Isolation: The process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lock-out or tag-out of all sources of energy; or blocking or disconnecting all mechanical linkages.

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.

Lock-Out: The placement of an approved lockout device on an energy isolating device, in accordance with the University's Control of Hazardous Energy Program (LOTO), ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lower Explosive Limit (LEL)/ Lower Flammable Limit (LFL): The minimum concentration of vapor or gas in air below which propagation of an explosive or flame does not occur on contact with a source of ignition. Below the LEL or LFL there is too little combustible fuel to sustain a flammable mixture.

Non-permit Confined Space: A confined space that does not contain any hazard capable of causing death or serious physical harm, or any potential atmospheric hazard capable of causing death or serious injury.

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.

Permissible Exposure Limit (PEL): The level of exposure established as the highest level of exposure an employee may be exposed to without incurring the risk of adverse health effects. The PEL is an OSHA- established "legal limit."

Permit-Required Confined Space (permit space): A confined space that has one or more of the following characteristics:

- a. Contains or has a potential to contain a hazardous atmosphere;
- b. Contains a material that has the potential for engulfing an entrant;
- c. Has an internal configuration such that an entrant could 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 other recognized serious safety or health hazard.

Permit-Required Confined Space Program: The employer's overall program for controlling, and, where appropriate, for protecting employees from permit space hazards and for regulating employee entry into permit spaces. This includes procedures within the SSU permit-required confined space program.

Permit System: The employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Prohibited Condition: Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Purging: The method by which gases, vapors, or other airborne impurities are displaced from a confined space.

Rescue Service: The personnel designated to rescue employees from permit spaces.

Retrieval System: The equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Tag-out: The placement of a tag-out device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tag-out device is removed.

Testing: The process by which the hazards that may confront entrants of a permit space are identified and evaluated.

## 4.0 WORK EVALUATION

---

### 4.1 Determination

- The Department of Environmental Health and Safety in cooperation with Facilities Management (FM) and/or affected departments shall ensure that all spaces within Sonoma State University are evaluated, classified, and documented using the appropriate Confined Space Classification Worksheet (found in Attachment B section).
- This evaluation and inventory list shall be reviewed annually and updated as needed.
- Any space that must be entered in order to be evaluated and classified must be entered using permit-required confined space entry procedures until such time as another space classification applies.
- All new operations must be evaluated by the Department of Environmental Health and Safety to determine if the proposed activity will involve confined space entry.

### 4.2 Classifications

This procedure addresses four (4) types of SSU work spaces, i.e. permit-required confined spaces<sup>2</sup>, non-permit confined spaces (including spaces reclassified as “non-permit spaces), “other confined spaces,” and restricted access areas. None of the aforementioned spaces shall be entered without the knowledge of the SSU Department Managers or Supervisors. Moreover, no space addressed in this procedure shall be entered until the hazardous (or potentially hazardous) conditions present in and around the space, including those hazards posed by the work to be performed in the space, are thoroughly assessed and controlled.

(1) Permit-required Confined Space—a space that exhibits ALL of the following three characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit; and
- Was not designed for continuous employee occupancy.

**AND** possesses **one or more** of the following hazards:

- A hazardous or potentially hazardous atmosphere;
- A material that has the potential for engulfing an entrant;

---

<sup>2</sup> 8 CCR 5157(c)(5)(A) offers “alternate entry procedures” where the sole hazard found in a confined space is “atmospheric.”

- An internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- Any other recognized serious safety or health hazard.

Confined Spaces Entered Using “Alternate Entry Procedures”—Spaces where: the sole hazard found in a confined space is atmospheric.

Examples of permit-required confined spaces include sewer and steam manholes, vaults (non- telecommunication), product storage tanks, and water tanks.

- The sole hazard or potential health hazard is atmospheric (e.g., oxygen deficient, toxic, or flammable) and the atmospheric hazard can be controlled through ventilation AND continuous ventilation is used. See Attachment D for details regarding operations involving “Alternate Entry Procedures.”

(2) Non-permit Confined Space—A space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit; and
- Was not designed for continuous employee occupancy.

**AND** does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Examples of confined spaces that could be deemed non-permit include crawl spaces and drop ceiling areas<sup>3</sup>.

(3) Other Confined Space—Locations where:

- Existing ventilation is insufficient to remove dangerous air contamination and/or oxygen deficiency which may exist or develop.
- Ready access or egress for the removal of a suddenly disabled employee is difficult due to the location and/or size of the opening(s).

**AND** are regulated by 8 CCR 5158 (Other Confined Space Operations).

Examples of other confined spaces include telecommunication vaults, electrical utility vaults, and trenches.

(4) Restricted Access Areas—Locations that:

- Are not confined spaces.
- Not routinely occupied.

---

<sup>3</sup> These confined spaces are only considered “non-permit” spaces when they meet the criterion specified in 4.2, #2 of this section, i.e. free of all serious hazards.

- Do not contain hazardous conditions, but due to other unusual conditions (e.g., location and lighting) warrant the employment of special precautions prior to and during entry.

**Note:** Permit-required and “other” confined spaces will be entered following Title 8 CCR 5157 confined space entry requirements, as incorporated in Section 5.0 of this procedure.

**Procedure** – Lone workers shall have a reliable means of communication. Supervisors shall be aware of employees by checking every 15 minutes.

Examples of restricted access areas include unfinished basements, inhabitable building spaces that are interstitial, and mezzanines.

#### 4.3 Department Confined Space Inventory

- a. Refer to Attachment A for SSU Confined Space Inventory Listing of identified and evaluated spaces.
- b. Refer to Attachment B for completed Confined Space Classification Worksheets.
- c. The basis for Confined Space Classification or Reclassification must be documented (i.e. permit-required; spaces eligible for entry under alternate procedures; and the reclassification of permit-required spaces as “non-permit” spaces. Refer to Attachment C (Safety Checklists), and Attachment D, Reclassification Form and Reclassification Certification.

#### 4.4 Department of Environmental Health and Safety

- a. Shall assist in identifying any and all operations potentially involving confined space entry.
- b. Shall assist in the evaluation and determine the classification of the confined spaces.

#### 4.5 Departments

- a. Shall assist in identifying any and all operations potentially involving confined space entry.
- b. Shall assist in the evaluation and determine the classification of the confined spaces.
- c. Shall ensure that a warning sign or label is attached to the entry points of all known confined spaces and maintain a current inventory list of known confined space locations.
  - i. All Permit to Enter confined spaces shall be posted with a sign or label similar to the following:

**DANGER  
PERMIT REQUIRED CONFINED SPACE  
DO NOT ENTER**

- d. Shall ensure that only trained personnel are assigned to confined space operations.
- e. Shall ensure that the employees assigned to each operation involving confined space entry follow all aspects of this procedure prior to entry into the space.
- f. Shall ensure that a **Confined Space Entry Permit Tracking Log (refer to Attachment F)** is maintained to document the issuance, cancellation, and recordkeeping of all issued Confined Space Entry Permits.
  - i. All issued permits shall be noted in the log at the time of issuance.
  - ii. Permit numbers shall be the date (month/date/year) of the operation. Should multiple permits be issues on the same date, permit numbers will include (a), (b), (c), as needed.
  - iii. At the completion of work or when entry operations are terminated, the permit shall be canceled, and the date of cancellation and the name of the person canceling the permit shall be noted in the log.
  - iv. Canceled permits shall remain in the log for at least one year and be reviewed during the annual program re-evaluation.
  - v. A copy of the log and cancelled permits shall be sent to the Dept. of EHS for review at the end of each calendar year.
- g. Shall review the job requirements and approve (or disallow) the planned operation.

## 5.0 ENTRY PROCEDURES FOR PERMIT REQUIRED CONFINED SPACES AND OTHER CONFINED SPACES

---

### 5.1 General Requirements

- a. Permit-required confined space entries performed by SSU employees require the use of a Confined Space Entry Permit, issued by the Department, prior to the space being entered.
- b. All confined spaces must be opened in a manner that will preclude worker injury. Examples of precautions to be taken include:
  - Standing upwind to prevent exposure to transient vapors.
  - Using the correct tools for removing lids and vault covers
  - Wearing the appropriate PPE to prevent head, eye, hand, and foot, injuries.
  - Remaining cognizant of negative and/or positive pressure build-up behind confined space closures (e.g., vaults, flanges, and previously sealed plates).
  - Immediately providing for the protection of pedestrians, workers, and vehicles if the opened confined space poses a hazard to those in proximity.
  - Taking measures to ensure that pipelines are clear before disconnections and using secondary containment when disconnecting pipelines to capture small leaks.
  - Using equipment to move heavy objects; employing the buddy system and/or proper lifting techniques when moving objects that can be safely moved by individuals.
- c. The internal atmosphere of all confined spaces must be tested prior to entry, and continuously for the duration of the job being performed pursuant to 6 and 7, as listed below, of this procedure to ensure safe entry conditions.
- d. All permit-required (and other) confined spaces must be ventilated prior to and during the entire job.
- e. The unique hazards associated with a given confined space operation (e.g. falling objects, noise, pedestrians, poor lighting, and traffic) must be assessed and controlled prior to work commencement and during work until completion.
- f. Confined space workers must also constantly be aware of the various sources of air contamination and oxygen depletion, which include, but are not limited to:
  - i. Natural gas leaks, fuel-saturated soil, and sewer gas production (these can be sources of elevated LELs, methane, and/or H<sub>2</sub>S);
  - ii. Rust (the oxygen involved in the formation of iron oxide is often taken from the atmosphere found inside of an iron vessel), potentially leaving the area oxygen deficient;

- iii. Chemical and/or vapor migration into the confined space from:
  - Decomposing biological matter (such as algae, sewage, and dead animals).
  - The internal or external use of paints, cleaning agents, and (other) chemicals used around or brought into the confined space;
  - Vehicle exhausts from idling and moving vehicles and fires;
  - Welding fumes.
- g. Rescue procedures must be in place before entry into a permit-required confined space can occur.

## 5.2 Responsibilities:

Performing work in permit-required confined spaces involves the support of an Entry Supervisor, Attendant (at least one), Entrant(s) and a Rescue Service<sup>4</sup>. These roles, with the exception of rescue services, are transferrable during the course of a confined space operation, provided that the individual fulfilling the role(s) is “trained and equipped” to competently serve in the assigned capacity and, where multiple job duties have been assigned, one does not detract from the other.

## 5.3 Entry Supervisor Duties:

- a. Identifies the scope of work to be performed in the space and assesses the associated hazards.
- b. Obtains work authorization from the Department and a blank confined space permit.
- c. Enters the name of the representative authorizing the work onto the Confined Space Permit.
- d. Completes the Confined Space Entry Permit and the appropriate Confined Space Classification Worksheet prior to allowing entry into the space or delegates this duty to a trained designee (e.g., the Attendant).
- e. Completes the Confined Space Determination Form (Attachment C)
- f. Ensures that air monitoring equipment is available, calibrated and or bump tested
- g. Ensures that the confined space is properly isolated<sup>5</sup>, monitored, and ventilated prior to entry.
- h. Ensures that emergency procedures are established prior to work commencement (i.e. verifies, where applicable, that the designated rescue

---

<sup>4</sup> SSU employees are not authorized to perform “entry rescues.” If non-entry rescue cannot be achieved, Rancho Adobe Fire Department will be notified prior to work commencement, immediately contacted during emergencies, and when entry is completed.

<sup>5</sup> Some confined spaces, such as sewers, cannot be effectively isolated. See Section 5.3.2, Attendants Duties, for entry requirements involving spaces that cannot be isolated.



service has resources available and will be on stand-by; and ensures that the methods used for summoning the service are functional).

- i. Establishes acceptable entry conditions pursuant to Section 7.1, Acceptable Entry Conditions and ensures that such conditions exist prior to and during entry into permit-required confined spaces.
- j. Ensures that all participants have received training commensurate with their job duties.
- k. Reviews the Entry Permit for completeness and accuracy.
- l. Validates the Entry Permit (with his or her signature), only when all pre-entry requirements, as specified in this procedure, have been met.
- m. Ensures that the content of the Entry Permit is discussed with all workers during a site-specific safety meeting before work begins.
- n. Ensures that the signed Entry Permit and Confined Space Classification Worksheet is posted near the entrance of the space, or makes the Permit, otherwise, accessible by other effective means.
- o. Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
- p. Terminates entry when the work is completed or immediately, upon the discovery of a condition that could negatively impact worker safety.
- q. Remains at the location of the confined space for the duration of the work or, prior to departure, transfers supervision to another on-site worker, trained to function in the capacity of "Entry Supervisor." Any change in oversight of the confined space operation must be noted on the Entry Permit<sup>6</sup>.
- r. Maintains verbal or radio communication with the attendant at all times during the entry (if not also functioning as an entrant or attendant).

#### 5.3.1 Attendant Duties:

- a. Knows and understands the hazards (including signs and symptoms of exposure) associated with the confined space operation.
- b. Understands how to assemble and use job-related equipment (e.g. ventilation systems, air monitoring equipment, PPE, lighting, barriers, shields, ladders, and emergency retrieval systems).
- c. Tests the atmosphere for oxygen content, LEL, carbon monoxide, hydrogen sulfide, and any other contaminant that can be reasonably expected to be

---

<sup>6</sup> This requirement can be achieved by listing multiple job duties when completing the permit (e.g., "John Doe: Attendant and Entry Supervisor").

present in the space. Air monitoring must occur prior to and continuously during entry to ensure the worker's safety.

**Note:** Air monitoring can be performed by any trained Sonoma State University confined space worker, as authorized by the Entry Supervisor.

- d. Continuously maintains awareness of authorized entrant(s) activities (including maintaining an accurate count and identity of all entrants).
- e. Remains outside of the permit-required confined space until relieved by another authorized attendant.
- f. Communicates with authorized entrants and monitors their activities.
- g. Monitors activities and working conditions in and around the space, ensuring that acceptable entry conditions are maintained pursuant to Section 7.1 Acceptable Entry Conditions.
- h. Alerts the authorized entrants to exit the space under any of the following circumstances:
  - The attendant detects a prohibited condition;
  - The attendant detects the behavioral effects of hazardous exposure in an entrant;
  - The attendant detects a situation outside the space that could endanger the authorized entrants;
  - The attendant cannot effectively and safely perform all the duties required of an attendant.
- i. Summons rescue and emergency services, if authorized entrants need assistance to escape from any confined space hazards.
- j. Warns and prevents unauthorized entry into confined space (notifies the Entry Supervisor in such cases).
- k. Performs non-entry rescues, as necessary, utilizing extraction equipment (i.e., retrieval system).
- l. Never monitors multiple spaces simultaneously.
- m. Never performs duties that may interfere with the primary and required duties of an attendant for confined space operations.

### 5.3.2 Entrant Duties

- a. Is knowledgeable of the hazards in the confined space, including:
  - Mode of exposure;
  - Signs and symptoms of exposure; and
  - Consequences of exposure.
- b. Properly uses the required safety equipment.

- c. Communicates with the attendant as necessary to enable the attendant to monitor the entrant's status and enable the attendant to alert the entrants.
- d. Alerts the attendant whenever:
  - The entrant recognizes any warning signs or symptoms of exposure to a dangerous situation; or
  - The entrant detects a prohibited condition.
- e. Immediately exits the space whenever:
  - Ordered to evacuate by the attendant and/or entry supervisor;
  - The entrant recognizes warning signs or symptoms of exposure to a dangerous situation;
  - A prohibited condition is detected; or
  - An evacuation alarm is activated.

## 6.0 RESCUE SERVICES

---

Sonoma State University employees are not to perform confined space entry rescues.

### 6.1 General Requirements

- a. Prior to entry into a permit to enter confined space, the Entry Supervisor will ensure that the Rancho Adobe Fire District is notified in advance by calling Police/Fire Dispatch at (707) 795-6011. The following information is to be provided:
  - Date and time of entry.
  - Location of confined space.
  - Expected duration of work.
- b. The notification is documented on the Permit in the section 8, Emergency Rescue System. Document date, time and whom at RAFD was notified.
- c. The Attendant must be prepared at all times to aid in the event of an emergency including attempting non-entry rescue and calling for help.
- d. At a minimum, the following emergency equipment must be staged at the confined space or be immediately available. Additional equipment may be required and shall be specified by the Entry Supervisor and/or the Department of Environmental Health and Safety or other department.
  - Emergency communication equipment (e.g. radio, telephone, signaling device).
- e. The Entry Supervisor shall remain available for verbal communication from the attendant during the course of the confined space entry.
- f. In the event of an emergency, the attendant must immediately notify the Entry Supervisor after calling 911.

### 6.2 Non-Entry Rescue

- a. Wherever feasible, non-entry rescue is the primary method for retrieving Sonoma State University workers from confined spaces during emergencies. If the worker is alert and capable of safely exiting the space during an emergency, then self-rescue is the method of choice.

If the worker will need assistance exiting the space, a retrieval system designed to safely remove workers (e.g., tripod, top-entry retrieval device) shall be utilized.

- b. Retrieval systems shall meet the following requirements (8 CCR 5157 (k)(3)(A&B)):
  - *Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at a suitable point so that when rescued, the entrant presents the smallest possible profile (for example at the center*

*of the entrant's back near shoulder level, or above the entrant's head). Wristlets may be used in lieu of the chest of full body harness if the employer can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.*

**Note:** While utilizing fall protection, employees need to follow Sonoma State University's Fall Protection Program.

**Note:** Retrieval systems can only be used where mechanically feasible and when the retrieval equipment would not increase the overall risk of injury.

### 6.3 Entry Rescue

- a. Entry rescue shall only be performed by the local Fire Department.
- b. Fire Department shall be notified of the need for rescue by calling 911.
- c. When calling for help the Attendant or Entry Supervisor shall give the following information:
  - Caller's name.
  - Address and exact location of the confined space.
  - Nature of the emergency (very brief):
    - Workers affected
    - Hazards
    - Events leading to emergency
    - Call back and/or contact information
- d. When emergency personnel arrive on-scene the Entry Supervisor and/or Attendant shall:
  - Update the rescue personnel.
  - Assist as needed.

## 7.0 ENTRY CONDITIONS

---

### 7.1 Acceptable Entry Conditions

Only confined spaces that meet all of the following conditions are considered acceptable for Sonoma State University confined space-trained workers to enter.

- a. The oxygen concentration is above 19.5 percent and below 23.5 percent.
- b. No detectable flammable gases or vapors (i.e., 0% LEL.)
- c. All chemical contaminants are at or below their respective PEL's, or other published exposure limits (if PEL's have not been established.)
- d. The space can be safely entered without the use of respiratory protection.
- e. The space has been isolated from all external and internal hazards (such as product lines, energized equipment, hot steam lines, and moving parts) and/or all of the identified hazards have been, otherwise, effectively controlled to the satisfaction of the supervisor/manager.

### 7.2 Conditions Prohibiting Entry – Applies to all Spaces

- a. The Confined Space Tracking Log is incomplete (Attachment E.)
- b. A Confined Space Entry Permit and/or Confined Space Classification Worksheet (where applicable) have not been initiated or have not been validated by an entry supervisor's signature. (Attachments D and B respectively.)
- c. The Confined Space Determination Form has not been completed (Attachment C.)
- d. Atmosphere of the confined space has not been tested and or monitoring equipment has not been calibrated or bump tested.
- e. Rescue procedures have not been established.
- f. Any condition exists that does not conform to Section 7.1 "Acceptable Entry Conditions".

## 8.0 NON-PERMIT CONFINED SPACE ENTRY PROCEDURES

---

### 8.1 General Requirements:

To ensure the safety of those slated for work within non-permit spaces, (such as crawl and drop ceiling spaces) the following precautions must be taken:

- a. Notify the Department or supervisor of your intent to enter a non-permit space. Provide the location and type of space (also provide the space number, if assigned); scope of work and projected job duration.
- b. Employ the “buddy system<sup>7</sup>” (at least two workers must be present during non-permit confined space entries).
  - Each worker shall have a reliable means of communication when not in direct-line-of-sight with each other.
  - When workers are not in-direct-line-of-sight, a verbal check-in is required every 15-minutes.
- c. Open all confined spaces in a manner that will preclude worker injury. Examples of precautions to be taken include, but are not limited to:
  - Standing upwind to prevent exposure to transient vapors.
  - Using the correct tools for removing lids and vault covers.
  - Wearing the appropriate PPE to prevent head, eye, hand, and foot, injuries.
  - Remaining cognizant of negative and/or positive pressure build-up behind confined space closures (e.g., vaults, flanges, and previously sealed plates).
  - Using equipment to move heavy objects; employing the buddy system and/or proper lifting techniques when moving objects that can be safely moved by individuals.
- d. Continuous testing shall be performed to ensure conditions have not changed per 6 and 7 listed below to ensure safe entry conditions. **THE RESULTS OF THE ATMOSPHERIC TESTS MUST BE DOCUMENTED.**
- e. Identify and control the unique hazards associated with the confined space operation (e.g. falling objects, noise pedestrians, poor lighting, and traffic) prior to work commencement.
- f. Be aware of the various sources of air contamination and oxygen depletion, which include, but are not limited to:
  - Natural gas leaks, fuel-saturated soil, and sewer gas production (these can be sources of elevated LELs, methane, and/or H<sub>2</sub>S);
  - Rust (the oxygen involved in the formation of iron oxide is often taken from the atmosphere found inside of an iron vessel);

---

<sup>7</sup> This is a Sonoma State University requirement.

- g. Chemical and/or vapor migration into the confined space from:
- Decomposing biological matter (such as algae, sewage, and dead animals).
  - The internal or external use of paints, cleaning agents, and (other) chemicals used around or brought into the confined space;
  - Vehicle exhausts and fires;
  - Welding fumes.
- h. Immediately exit the space, upon the discovery of any condition that would jeopardize the safety of the entrants or would render the confined space “permit-required.”

**Note:** Work being performed in or around a “non-permit” confined space could render the space “permit-required.” therefore, those working in non-permit confined spaces must remain aware of changing conditions occurring in and around the space and immediately exit the space when unsafe conditions develop.

## 8.2 Reclassification of a Permit-Required Confined Space:

Reclassification of a permit-required confined space cannot occur without written concurrence from the Director of the Sonoma State University, Department of Environmental Health and Safety.

A permit-required confined space may be reclassified as a “non-permit” space and, therefore, be entered following the requirements contained in Section 8.0 of this procedure, if all of the hazards causing the space to require a permit have been eliminated.

The reclassification must be documented using the forms in Attachment C.

**Note:** Control of an atmospheric hazard through forced air ventilation does **not** constitute elimination of the hazard.

If the confined space must be entered to eliminate the hazards, the entry requirements contained in Section 5.0, *Permit-Required Confined Space Entry Procedures*, apply (which includes Section 7.1, *Acceptable Entry Conditions*).



## 9.0 RESTRICTED ACCESS AREAS

---

### 9.1 General Requirements

Restricted access areas are not confined spaces, but given the complexity of their configuration and/or location, warrant that special precautions be taken prior to entering and performing work<sup>8</sup>.

When work is to be performed in restricted access areas (such as unfinished basements, poorly lit tunnels, and inhabitable interstitial spaces), Sonoma State University personnel shall do the following:

- (1) Notify their manager or supervisor of intent to enter a restricted access space. Provide the location and type of space; scope of work and projected job duration.
- (2) Establish a radio point-of-contact who is not a co-occupant of the space (e.g., co-worker, Department representative).
- (3) Report your location and status every 15 to 30 minutes to the designated point-of-contact.
- (4) In the event of a failure to “call-in” on the part of the worker located within the restricted access area, the designated point-of-contact must pursue means of locating the worker (e.g., calling the department supervisor responsible for the work; calling the facility where the work is being performed; and/or initiating on or offsite emergency procedures).

**Note:** The Department of Environmental Health and Safety and Facility Management Supervisor may at his/her discretion require the “Buddy System” to be utilized while work occurs in any Sonoma State University restricted area. Reference Section 8.1.2 of this Program.

---

<sup>8</sup> Some restricted access areas are so located that if a worker were suffering a sudden medical emergency (e.g., a heart attack), a substantial amount of time could pass before the victim is discovered.

## 10.0 TRAINING

---

Applies to all spaces:

- a. Employees who will participate in permit-required and “other” confined space operations must first receive Permit-Required Confined Space/Other Confined Space training (e.g., entry supervisors, attendants, entrants, and EHS representatives responsible for Confined Space Program oversight).
- b. Training shall be updated whenever there is a change in entry procedures, new hazards have been identified, or if inadequacies are found in an employee’s knowledge, work practices, or compliance with these procedures.
- c. Training shall establish proficiency by use of one or more of the following:
  - Completion of a written examination, and/or;
  - Completion and review of training exercises which may include demonstration of the proper use of test instruments, personal protective clothing and equipment, lifelines and harnesses, retrieval devices, and other related equipment items.
- d. The Manager of each department shall certify that the training requirements, listed below, have been satisfied by any department employee participating in confined space activities. The training must be documented and a copy or access to the training record provided to the Department of Environmental Health and Safety. The training certification document must include the following:
  - Employee name.
  - Date of training.
  - Name (and initials or signature) of the trainer.
- e. Training shall include the following items:
  - Hazards of confined space operations.
  - Signs and symptoms of exposure to hazards.
  - Differences between non-permit and permit-required confined space; re-classified spaces; permit required spaces that may be entered following alternate procedures; other confined spaces, and restricted access spaces.
  - The content of this Program.
  - The Cal/OSHA permit-required confined space and other Confined Space standards.
  - Use of the confined-space entry permit and Confined Space Classification Worksheet.
  - Conditions prohibiting safe entry.
  - Duties of the Entry Supervisor, Attendant, and Authorized Entrant.
  - Use of test instruments, retrieval line, harness, extraction device and personal protective clothing and equipment.

- Emergency and rescue procedures.
- f. Employee training records are maintained by one or more of the following:
- The HR Training Coordinator/LMS
  - The employee's Department
  - The Dept of Environmental Health and Safety

Training records shall be maintained for three years.

## **11.0 CONTRACTOR ENTRY INTO CONFINED SPACES**

---

Applies to all spaces:

### **11.1 Contractor Confined Space Entry**

- a. The University shall require and verify that any contractor who may enter a confined space as part of contracted work has implemented a written permit-required confined space program.
- b. The Department of Environmental Health and Safety or contracting department shall review the contractor's confined space procedures for correctness and applicability to the work to be performed at Sonoma State University.
- c. The contractor shall be informed of the hazards, configuration, and entry requirements for the confined spaces(s) to be entered.
- d. The Department of Environmental Health and Safety and/or contracting department shall advise the contractor of any site-specific procedures needed for protecting employees in or near the spaces.

### **11.2 Joint Department and Contractors Entry into Confined Spaces**

In the event of joint Sonoma State and contractor conditions:

- a. The Department of Environmental Health and Safety or contracting department shall coordinate entry operations for the space.
- b. All items listed in Section 11.1, *Contractor Entry into Confined Spaces*, shall be satisfied.

## **12.0 PROGRAM EVALUATION**

---

### **12.1 General Requirements**

- a. The Confined Space Safety Program (i.e., this procedure) shall be re-evaluated annually by the Sonoma State University designee with the Department of Environmental Health and Safety.
- b. Annual re-evaluation shall, at a minimum include a review of the following records:
  - Canceled Confined Space Entry Permits for the previous 12 months.
  - Confined space classifications.
  - Training records.
  - Any known and/or documented confined space safety incidents.
  - Air monitoring instrumentation, retrieval systems, and other safety equipment condition, usage, and maintenance.

### **12.2 Responsibilities**

- a. The Department of Environmental Health and Safety shall be responsible for initiating and documenting the annual program review.
- b. The Director of the Department of Environmental Health and Safety, Department Managers, and Entry Supervisors shall participate in each annual review.

### **12.3 Revisions**

- a. Revisions to written procedures, training, confined space inventories, the Permit-Required Confined Space Entry Permit, air testing and safety equipment, etc., shall be implemented and documented when warranted by program re-evaluation.
- b. All Sonoma State University confined space-trained employees shall be informed of and trained on all program revisions.

## **13.0 ATTACHMENTS**

---

- A. Sonoma State University Confined Space Inventory
- B. Classification Worksheets (Pending and Completed)
- C. Confined Space Determination Form
- D. Entry Permit
- E. Entry Permit Tracking Log
- F. Ventilation Guidelines
- G. Classification Worksheet (Form)

**Attachment A:**

**Sonoma State University**

**Confined Space Inventory**













# **Attachment B:**

**Sonoma State University**

**Confined Space Classification  
Worksheets**

**(Pending and Completed)**


**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_

FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Electrical Manholes/Vaults

SPACE LOCATION: Various Locations

<b>CLASSIFICATION</b>	<input checked="" type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>	
	<input type="checkbox"/>	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5) <i>Use Safety Checklist No. 2</i>	
	<input type="checkbox"/>	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7) <i>Use Safety Checklist No. 3</i>	
	<input type="checkbox"/>	<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)	
	<input type="checkbox"/>	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)	
	<input type="checkbox"/>	Space not regulated by OSHA	
<b>HAZARDS</b>	<b>Chemical:</b>		
	<b>Physical:</b>		
	<b>Other:</b>		
<b>COMMENTS</b>			

CLASSIFIED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_ FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Steam Manholes/Vaults SPACE LOCATION: Various Locations


<b>CLASSIFICATION</b>	<input checked="" type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>	
		Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5)) <i>Use Safety Checklist No. 2</i>	
		Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7)) <i>Use Safety Checklist No. 3</i>	
		<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)	
		<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)	
		Space not regulated by OSHA	
<b>HAZARDS</b>	<b>Chemical:</b> _____		
	<b>Physical:</b> _____		
	<b>Other:</b> _____		
<b>COMMENTS</b>	_____		

CLASSIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_ FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Telecom Manholes/Vaults SPACE LOCATION: Various Locations

<b>CLASSIFICATION</b>	<input checked="" type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>	
	<input type="checkbox"/>	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5) <i>Use Safety Checklist No. 2</i>	
	<input type="checkbox"/>	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7) <i>Use Safety Checklist No. 3</i>	
	<input type="checkbox"/>	<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)	
	<input type="checkbox"/>	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)	
	<input type="checkbox"/>	Space not regulated by OSHA	
<b>HAZARDS</b>	<b>Chemical:</b> _____		
	<b>Physical:</b> _____		
	<b>Other:</b> _____		
<b>COMMENTS</b>	_____		

CLASSIFIED BY: \_\_\_\_\_


DATE: \_\_\_\_\_



**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_ FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Valve Control Vaults SPACE LOCATION: Various Locations


<b>CLASSIFICATION</b>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>	
	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5)) <i>Use Safety Checklist No. 2</i>	
	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7)) <i>Use Safety Checklist No. 3</i>	
	<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)	
	X <b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)	
	Space not regulated by OSHA	
<b>HAZARDS</b>	<b>Chemical:</b> _____	
	<b>Physical:</b> _____	
	<b>Other:</b> _____	
<b>COMMENTS</b>	_____	

CLASSIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_ FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Basement Crawl Spaces SPACE LOCATION: Various Locations

<b>CLASSIFICATION</b>	<input type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>		
	<input type="checkbox"/>	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5)) <i>Use Safety Checklist No. 2</i>		
	<input type="checkbox"/>	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7)) <i>Use Safety Checklist No. 3</i>		
	<input type="checkbox"/>	<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)		
	<input checked="" type="checkbox"/>	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)		
	<input type="checkbox"/>	Space not regulated by OSHA		
	<b>HAZARDS</b>			
	<b>Chemical:</b> _____ <b>Physical:</b> _____ <b>Other:</b> _____			
	<b>COMMENT</b>	Restricted Access		

CLASSIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_ FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Attic Spaces SPACE LOCATION: Various Locations

<b>CLASSIFICATION</b>	<input type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>		
	<input type="checkbox"/>	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5)) <i>Use Safety Checklist No. 2</i>		
	<input type="checkbox"/>	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7)) <i>Use Safety Checklist No. 3</i>		
	<input type="checkbox"/>	<b>Other</b> confined space operation—Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)		
	<input checked="" type="checkbox"/>	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)		
	<input type="checkbox"/>	Space not regulated by OSHA		
	<b>HAZARDS</b>			<p><b>Chemical:</b> _____</p> <p><b>Physical:</b> _____</p> <p><b>Other:</b> _____</p>
	<b>COMMENTS</b>			Restricted Access

CLASSIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: Facility Mgmt

FACILITY LOCATION: Central Plant

SPACE NAME: Central Plant Tunnel

SPACE LOCATION: Various Locations

<b>CLASSIFICATION</b>	<input type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>
	<input type="checkbox"/>	
	<input type="checkbox"/>	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5) <i>Use Safety Checklist No. 2</i>
	<input type="checkbox"/>	
	<input type="checkbox"/>	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7) <i>Use Safety Checklist No. 3</i>
	<input type="checkbox"/>	
	<input type="checkbox"/>	<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)
	<input checked="" type="checkbox"/>	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)
	<input type="checkbox"/>	Space not regulated by OSHA
<b>HAZARDS</b>	<b>Chemical:</b>	
	<b>Physical:</b>	
	<b>Other:</b>	
<b>COMMENTS</b>		

CLASSIFIED BY: \_\_\_\_\_

DATE: \_\_\_\_\_


**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_

FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: Utility Chase Way

SPACE LOCATION: Multiple

<b>CLASSIFICATION</b>	<input type="checkbox"/>	<b>Permit-required</b> confined space (8CCR 5157) <i>Use Safety Checklist No. 1</i>	
	<input type="checkbox"/>		
	<input type="checkbox"/>	Permit required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5) <i>Use Safety Checklist No. 2</i>	
	<input type="checkbox"/>		
	<input type="checkbox"/>	Permit required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7) <i>Use Safety Checklist No. 3</i>	
	<input type="checkbox"/>		
	<input type="checkbox"/>	<b>Other</b> confined space operation-Use Safety Checklist No. 1 or No. 2, depending on air test results (see below)	
	<input checked="" type="checkbox"/>	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which re-classify the space)	
	<input type="checkbox"/>	Space not regulated by OSHA	
<b>HAZARDS</b>	<b>Chemical:</b> _____		
	<b>Physical:</b> _____		
	<b>Other:</b> _____		
<b>COMMENTS</b>	_____		

CLASSIFIED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

**Attachment C:**

**Confined Space Determination Form**

## CONFINED SPACE DETERMINATION FORM

### Step 1 – Determine if the space is a *Confined Space*

- A. Is the space large enough for an employee to bodily enter?  Yes  No
- B. Does the space have limited or restricted means of entry or exit?  Yes  No
- C. Is the space NOT designed for continuous employee occupancy?  Yes  No

If the answer to **any** of the above questions is NO, the space is **not** a confined space, and there are no further requirements.

If the answer to **all three** of the above questions is YES, the space is considered a confined space, and **must** be considered to be a Permit Required Confined Space. Go to Step 2 to determine if the confined space can be **reclassified** to a **Non-Permit** Confined Space.

### Step 2 – Determine if the confined space can be reclassified to a Non-Permit space

- A. Are there any engulfment hazards?  Yes  No
- B. Is there any potential for hazardous atmospheres?  Yes  No
- C. Are there any entrapment hazards?  Yes  No
- D. Are there any other recognized safety or health hazards?  Yes  No

If the answer to **any** of the above questions is YES, the space **must** be considered a Permit Required Confined Space. Entry into this space is **prohibited** until all of the requirements of the Permit Required Confined Space Entry Procedure are followed.

If the answer to all of the questions in Step 2 is NO, the space may be reclassified to a non-permit space. This form must be completed, signed and dated by the competent person making the determination.

**This form must be made available to all employees entering the space.**

Complete the SSU Confined Space Permit and attach this form.

Date: \_\_\_\_\_ Location Evaluated: \_\_\_\_\_

Name of person making determination: \_\_\_\_\_ Signature: \_\_\_\_\_

**Attachment D:**

**Confined Space Entry Permit**



**CONFINED SPACE ENTRY PROGRAM  
CONFINED SPACE ENTRY PERMIT**

**Permit Number:** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

**SEE REVERSE FOR DESCRIPTIONS AND PROCEDURES**

**1.**     This is a "Permit-Required" confined space entry       This is a **CERTIFICATE for an "Alternate Procedure"** confined space entry       This is a **CERTIFICATE for a "Non-Permit Required"** confined space entry

**2. GENERAL INFORMATION**

Date Issued: \_\_\_\_\_ Time Issued: \_\_\_\_\_ Time Permit Expires: \_\_\_\_\_  
Confined Space #/Location: \_\_\_\_\_ Purpose of Entry: \_\_\_\_\_

**3. List hazard(s) associated with this entry:**

**4. Confined Space PREPARATION:**  Drained  
 Ventilated     Purged     Flushed     Other: \_  
**Openings:**  Barricaded  Guarded

**5. ISOLATION**

**Equipment:**  Locked out/Tagged  Other:  
**Lines/Pipes:**  Disconnected  Blanked  Other:

**6. COMMUNICATION PROCEDURES at confined space:**

Voice       Radio

**7. Other Required Permissions (e.g. Hot Work Permit):**

**8. EMERGENCY RESCUE SYSTEM:**     Self Rescue       911       Other:

**9. IDENTIFY SPECIAL EQUIPMENT REQUIRED:**     Safety harness/lifeline       Hoist     Other:

**10. SPECIFY REQUIRED PROTECTIVE EQUIPMENT (PPE):**

Safety glasses/goggles     Ear Plugs     Gloves     Protective Clothing     Hard Hat     Safety Shoes     Respirator  
(type/cartridge used): \_\_\_\_\_

**11. ROSTER**

<b>Entry Supervisor:</b>	Entry Approved – Initial:	Entry Terminated – Initial:	Permit Transferred- Initial:
<b>Attendant:</b>	Initial:	<b>Entrant:</b>	Initial:
<b>Entrant:</b>	Initial:	<b>Entrant:</b>	Initial:
<b>Entrant:</b>	Initial:	<b>Entrant:</b>	Initial:

**12. AIR MONITORING READINGS (use add'l paper if needed)**

Hazard	Acceptable Conditions	Pre-Entry Check (at 4' intervals)	After Ventilating and/or Isolation					Periodic Checks (document every 15 min. unless specified)						
Oxygen	19.5-23.5%													
LEL	< 10%													
H2S	< 5 ppm													
CO	< 50 ppm													
Other:														
<b>TIME</b>		:	:	:	:	:	:	:	:	:	:	:	:	:
<b>Initial</b>														

Instrument make, model, serial #: \_\_\_\_\_ Last calibrated: \_\_\_\_\_ Bump test/calibration verified by: \_\_\_\_\_

**Post this Permit at job site. Return Permit to Supervisor immediately after completion. Retain Permit in dept. files for one year.**

## DEFINITIONS & INSTRUCTIONS

**Confined Spaces have the following characteristics:**

- a. Large enough to enter and perform work;
- b. Having limited or restricted means of entry and exit; and
- c. Not designated for continuous worker occupancy.

**Permit-Required Confined Spaces have one of more of the following characteristics:**

- a. Contains a known or potentially hazardous atmosphere;
- b. Contains a material that can engulf entrants (e.g., soil, sand);
- c. Inward sloping walls or dangerously sloping floor; or
- d. Contains any other serious safety or health hazard.

**Permit Number = DD – MM – YYYY (day, month, year)**

**Entering a Permit-Required Confined Space**

1. The Entry Supervisor physically inspects the space to determine potential hazards and if the entry is a “Permit-Required,” “Alternate Procedure,” or “Non-Permit” entry. Entry Supervisor then completes all items on this Confined Space Entry Permit.
2. At least one Attendant externally monitors the Permit Space being entered for the duration of the entry operation.
3. Maintain retrieval equipment and use all safety equipment as specified on the permit.
4. Attendant verifies acceptable entry conditions by identifying, and controlling or eliminating, any hazards; by testing the atmosphere with an oxygen/gas detector at 4-foot intervals for known or expected contaminants; and by complying with all entry permit conditions.
5. Attendant directs the Entrant(s) to enter and exit the space, and conducts periodic checks of hazard controls.
6. Attendant orders immediate evacuation of the space if safety equipment fails or if the space becomes, or has the potential to become, immediately hazardous. If necessary, Attendant summons emergency responders, but NEVER ENTERS the space.
7. When confined space operation is complete, Entry Supervisor accounts for all Entrants, & terminates entry by initialing in Section 11.

**Entering a Permit Confined Space using “Alternate Procedure”**

- A. This Alternate Entry Procedure may be used if the only hazard present in the confined space (as determine by Entry Supervisor) is: 1) atmospheric in nature, and 2) the atmospheric hazard can be controlled by mechanical ventilation alone, and if 3) the Permit Space atmosphere will not become immediately dangerous to life and health (IDLH) if the mechanical ventilation fails.
- B. After evaluating the “Permit-Required Confined Space,” and establishing appropriate atmospheric controls, the Entry Supervisor may classify the Permit Space as an Alternate Entry Space by checking the appropriate box in Section #1 of the Confined Space Entry Permit, and completing applicable parts of “Sections 2, 3, 4, 5,6, 8, 9, 10, 11, and 12” of the Entry Permit.
- C. When entering the Alternate Entry Confined Space, the Entrant will:
  1. Ensure the mechanical ventilation system is operational and providing clean, fresh air to the Entrants work location within the space during the entire entry;
  2. Ensure Attendant tests the atmosphere of the Permit Space prior to entry into the space;
  3. Use and continually operate a personal gas detector during the entire confined space.
  4. Immediately evacuate the space if ventilation fails, or if the portable air sampling equipment fails or alarms; and
  5. Immediately evacuate the space if you discover, or become aware of a previously unrecognized hazard. If this occurs, immediately notify the Entry Supervisor (or Entrant’s supervisor). The Entry Supervisor re-evaluates the Permit Space and implements appropriate safety precautions prior to resuming the confined space operation.

**Entering a Non-Permit Confined Space**

- A. If no inherent hazard is associated with the space, or if all inherent hazards have been “ELIMINATED” (not just controlled, but eliminated), the space may be entered using the following guidelines.
- B. When entering the Non-Permit Confined Space, the Entrant(s) will:
  1. Survey the surrounding area for potential hazards and sources of drifting vapors and gases before entry;
  2. Always test a Non-Permit Confined Space with an oxygen/gas detector before and during entry; document pre-entry test;
  3. Follow the Confined Space program and safety rules and use safe work practices when entering and working in the space;
  4. Never use paints, thinners, chemicals, or weld or create any other atmospheric hazard while working in the space;
  5. Never introduce any other atmospheric, mechanical, engulfing, or electrical hazard into the space.
- Note:** Introduction of a hazard (e.g., paint thinner) into a confined space requires the full permit process be followed.
- C. All steps taken to reclassify a Permit-Required Space to a Non-Permit Required Space must be written on the entry permit and the confined space determination worksheet to be utilized.

**Attachment E:**

**Confined Space Entry Permit  
Tracking Log**



**Attachment F:**

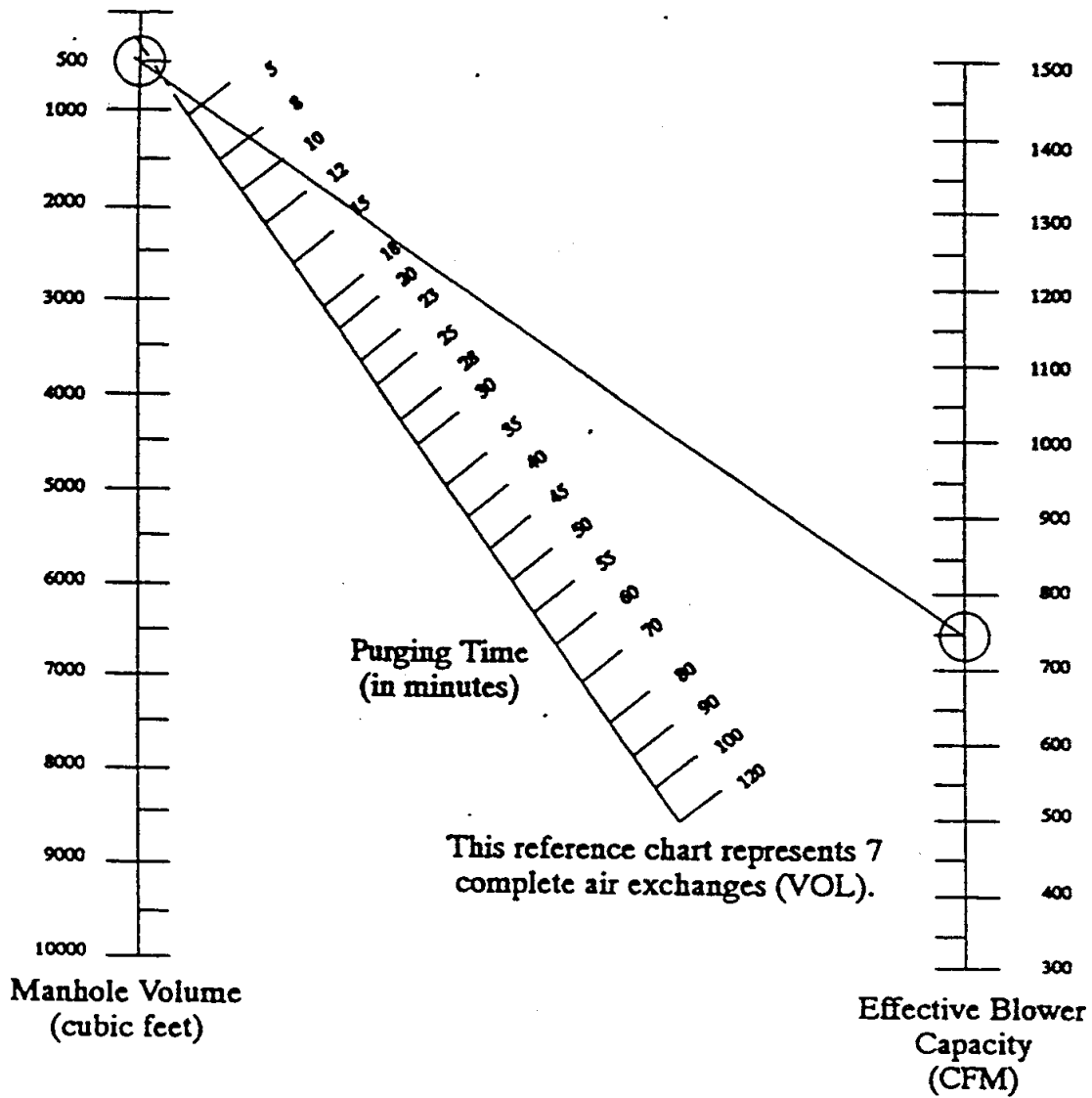
**Confined Space  
Ventilation Guidelines**

## **CONFINED SPACE VENTILATION GUIDELINES**

1. Blowers are used to purge hazardous atmospheres. Blowers must be intrinsically safe. They have an effective capacity in CFM (cubic feet per minute). Purge times are influenced by;
  - a. The capacity of the blower.
  - b. The amount of contamination of the air in the space and the rate at which the contaminants are being released into (or produced in) the space.
  - c. The volume of the space.
  - d. The number of bends in the ventilator hose.
2. While purging, the dropped end of the hose should:
  - a. Hang vertically.
  - b. Not be more than two feet above the floor.
3. When using a blower, make sure that:
  - a. The blower intake is away from traffic to avoid vehicle exhaust fumes.
  - b. If the blower is gas-powered, the motor exhaust is not being sucked into the air intake.
4. Another good proactive is to point the blower hose at a wall of the space. This will create air currents that may help disperse pockets of gas.
5. Use of nomograph: To estimate initial ventilation period before testing (i.e., purging).
  - a. Place straightedge on vault volume (left scale). Place other end of straightedge on blower capacity (right edge). Read required purging time, in minutes, on diagonal scale.
  - b. 8' x 9' x 7' deep vault; 750 CFM blower. Vault volume = 8 x 9 x 7 = 504 square feet.
  - c. From chart, purging time is less than five minutes.
6. Use of a formula to estimate initial ventilation period before testing (i.e., testing).

$$\text{Formula for Time to Purge} = \frac{L \times W \times D \times 7 \text{ Air Changes}}{\text{CFM of Blower}}$$

- a. If two blowers are used, add the two capacities, then proceed as above.
- b. When toxic gases are encountered, increase purging time by 50 percent.
- c. Effective blower capacity is measured with one or two 90° bends in standard 15-foot blower hose.



Effective Blower Capacity (CFM)	Conventional Vault (1,000-10,000 cubic feet)	Offset Access Vault (with permanent ventilating duct)	Deep Neck Vault		Irregular Shape Vault	
			Permanent Ventilating Duct	Coupled Hose	Uncongested	Congested
One 90° bend						
Two 90° bends						

Use blower capacity with two 90° bends unless blower has been certified with coupled hose with one 90° bend.

**Attachment G:**

**Confined Space  
Classification Worksheet**


**(Blank Form- use for newly identified  
confined spaces)**



**CONFINED SPACE CLASSIFICATION WORKSHEET**

DEPARTMENT: \_\_\_\_\_ FACILITY LOCATION: \_\_\_\_\_

SPACE NAME: \_\_\_\_\_ SPACE LOCATION: \_\_\_\_\_

<b>CLASSIFICATION</b>	<b>Permit-required</b> confined space (8 CCR 5157) <i>Use Safety Checklist No. 1</i>	
	Permit-required confined space—entry allowed using <b>alternate procedures</b> (8 CCR 5157(c)(5) <i>Use Safety Checklist No. 2</i>	
	Permit-required confined space— <b>reclassified</b> to non-permit required space (8 CCR 5157(c)(7) <i>Use Safety Checklist No. 3</i>	
	<b>Other</b> confined space operation - Use Safety Checklist No.1 or No. 2, depending on air test results (see below)	
	<b>Non-Permit Space</b> (not regulated by OSHA unless conditions change which reclassify the space)	
	Space not regulated by OSHA	
	_____	
<b>HAZARDS</b>	<b>Chemical:</b> _____	
	<b>Physical:</b> _____	
	<b>Procedure:</b> _____	
<b>COMMENTS</b>	_____	

CLASSIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_